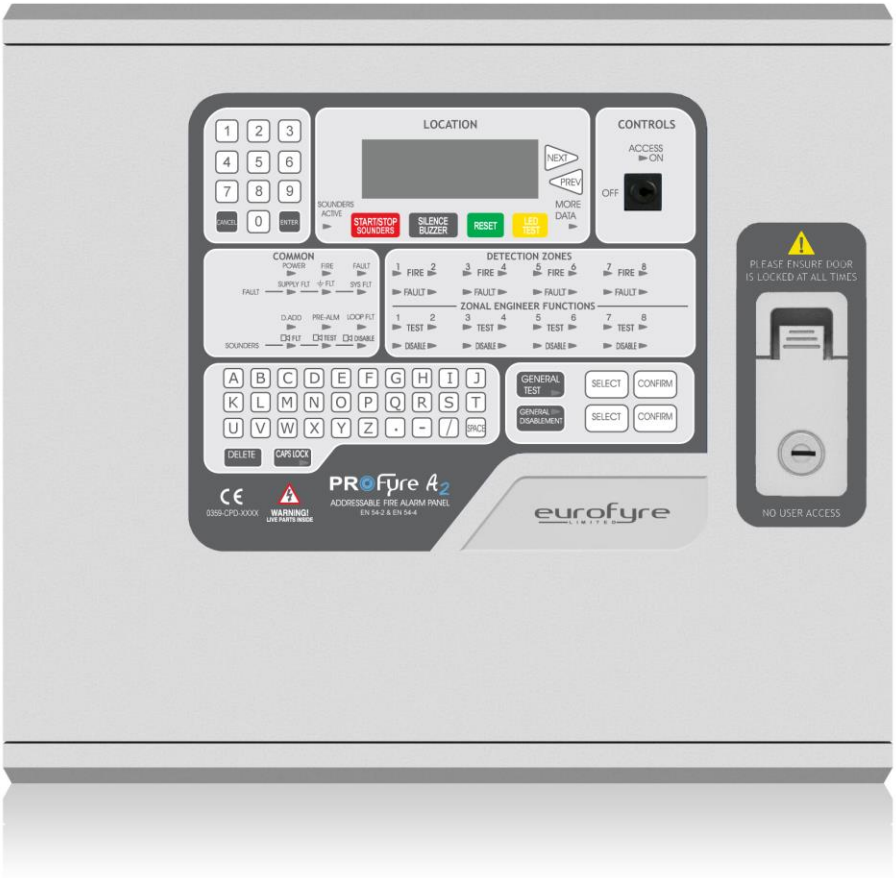
PROFyre A2

ONE OR TWO LOOP ANALOGUE ADDRESSABLE FIRE ALARM CONTROL PANEL



INSTALLATION MANUAL

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1. SAFETY INFORMATION

WARNING: Read this section completely before commencing installation.

1.1 INSTALLATION INFORMATION

THIS FIRE ALARM CONTROL PANEL IS CLASS 1 EQUIPMENT AND MUST BE EARTHED.

This equipment must be installed and maintained by a qualified and technically experienced person.

This C.I.E. must be wired to a fused spur rated at 3A. It must NOT be connected via a removable plug, or be connected through an RCD device.

Prior to commencing installation of the control panel, ensure that adequate precautions are taken to prevent damage to the sensitive electronic components on the display board and the control board due to electrostatic discharge. You should discharge any static electricity you may have accumulated by touching a convenient earthed object such as an unpainted copper radiator pipe. You should repeat the process at regular intervals during the installation process, especially if you are required to walk over carpets.

The panel must be located in a clean, dry position, which is not subject to excessive shock or vibration and at least 2 metres away from pager systems or any other radio transmitting equipment. The operating temperature range is 0ºC to 40ºC; maximum humidity is 95%.

HANDLING THE PCBS

If the PCBs are to be removed to ease fitting the enclosure and cables, care must be taken to avoid damage by static.

The best method is to wear an earth strap, but touching any earth point (e.g. building plumbing) will help to discharge any static. Always handle PCBs by their sides and avoid touching the legs of any components. Keep the PCBs away from damp dirty areas, e.g. in a small cardboard box.

1.2 SAFETY PRECAUTIONS DURING NORMAL OPERATION OF PANEL

NOTE: When the ProFyre A2 panel is operating normally, i.e. not being tended by service personnel, the access door must be closed and locked. After locking, the key MUST be removed and ONLY held by the responsible person and / or the service personnel. It must under NO CIRCUMSTANCES be held by the user.

1.3 BATTERY INFORMATION

This C.I.E. uses 2 x 12V Sealed Lead Acid (SLA) batteries up to 12Ah.

CAUTION:

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO BATTERY MANUFACTURERS INSTRUCTIONS.

IMPORTANT NOTES ON BATTERIES:

DANGER: Batteries are electrically live at all times. **NEVER short circuit the battery terminals.**

WARNING: Batteries are often heavy; take great care when lifting and transporting batteries. For weights above 24 kilos, lifting aids should be used.

DANGER: Do NOT attempt to remove the battery lid or tamper with the internal workings of the battery. Electrolyte is a highly corrosive substance, and presents significant danger to yourself and to anything else it touches. In case of accidental skin or eye contact, flush the affected area with plenty of clean, fresh water and seek immediate medical attention. Valve Regulated Lead Acid (VRLA) batteries are “low maintenance”, requiring no electrolyte top-up or measurement of specific gravity.

1.4 PRODUCT DISPOSAL AT THE END OF ITS WORKING LIFE

Like all electronic equipment, at the end of its working life this unit should not be disposed of in a refuse bin. It should be taken to a local reprocessing site as per the guidelines of the WEEE directive, for correct disposal.

2. PRODUCT DESIGN INFORMATION

2.1 FIRE ALARM CONTROL SECTION

The ProFyre A2 Fire Alarm Control and Indicating Equipment (CIE) Has been designed to EN54-2:1998 A1 + A2 - Fire Detection & Fire Alarm Systems – Control & Indicating Equipment.

As well as meeting the requirements of EN54-2:1998 A1 + A2, the ProFyre A2 also has the following options with requirements:-

Clause 7.8 Output to fire alarm devices (Option with requirements)

Clause 7.12 Dependencies on more than one alarm signal (Option with requirements)

Clause 8.3 Fault signals from points (Option with requirements)

Clause 9.5 Disablement of addressable points (Option with requirements)

Clause 10 Test Condition (Option with requirements)

The ProFyre A2 also has the following ancillary functions not required by the Standard:-

- Class Change Input to allow remote activation of sounders.
- Serial repeater output (RS485).
- Serial Output Port (RS232).

2.2 POWER SUPPLY SECTION

The ProFyre A2 Fire Alarm Panels Power Supply Equipment (PSE) Has been designed to EN54-4:1998 A1 + A2 - Fire Detection & Fire Alarm Systems – Power Supply Equipment.

The PSE has been designed to charge batteries up to 12 Ah within the time limits specified by EN54-4.

The PSE will draw a maximum of 25mA from the battery in the event of mains failure.

The PSE is a switching power supply, with a supply rating (IMAX) of 2.0 Amps.

The PSE has a 750mA limited charger output.

2.3 ENVIRONMENTAL

- It will operate in ambient temperatures of –5 to 40oC.
- It will operate in a relative humidity of up to 95% (non condensing).
- It will withstand vibrations between 5 & 150 Hz.
- The CIE & PSE should be maintained as described in section 3 of the User Manual, Maintenance Guide & Log Book.

3. INTRODUCTION TO THE PANEL

3.1 PROFYRE A2 PANEL HISTORY

This manual covers the 3rd revision of the ProFyre A2 panel. Here is a brief history of the different versions:-

VERSION 1

VERSION 2

VERSION 3

Version 1: ProFyre A2 64 & ProFyre A2 126

The original simplicities had basic operation & no event log. The 2 versions had different PCBs, so a 64 is not upgradeable to a 126 version

Version 2: ProFyre A2 – plastic box

This had the following enhancements:-

- Real time clock
- Event Log (2048 events)
- Printer port (RS232)
- Repeater port on CPU card
- Improved fault messages
- Improved call point identification (Panel now identifies a call point alarm immediately)
- Improved sounder base starting & stopping time
- Option to disable individual devices or whole zones
- Detector LED & sounder can be operated from the menu to help identify devices
- Panel software version can be viewed through menu.
- The 64 could be upgraded to a 126 by changing the CPU card (The Old version ProFyre A2 126 could also be upgraded to a ProFyre A2 by replacing the CPU card).

Version 3 ProFyre A2 – Metal box

Version 3 of the ProFyre A2 panel's main change is that it is now available as a 2 loop version. The other changes are:-

- Redesigned to fit a metal enclosure
- Separate EN54-4 PSU
- The CPU card is now integrated on the display PCB, so is no longer user upgradable.
- User definable zones
- Option for zonal or common alarm operation
- Options for I/O operation
- Alarm Verification
- User selectable languages
- Option for ProFyre Mk 2 protocol

With this latest version, the panel still offers the ProFyre A2 of the previous versions, but also allows user configurations to zones & outputs to make the panel more flexible. If you need a manual for an earlier ProFyre A2, please contact your supplier, or look on our website **www.gltexports.com/archive**.

3.2 PANEL DESCRIPTION & DESIGN CONCEPT

The ProFyre A2 is a one or two loop analogue addressable fire alarm control panel designed to EN54 part 2 & 4. It is available in three versions. ProFyre A2 64 allows 64 devices to be connected to one loop, and divided into 4 zones. ProFyre A2 126 allows 126 devices to be connected to one loop, and divided into 8 zones. ProFyre A2 252 allows 252 devices to be connected as 2 loops of 126 devices, and divided into 8 zones.

The ProFyre A2 has been designed to only use addressable sounders (so that all devices sit on the same wiring loop). By default all sounders on a ProFyre A2 panel will activate on any alarm.

It has been designed to give the advantages of an addressable system, with the ProFyre A2 of a conventional system. To help achieve this, the ProFyre A2 uses default values to cut out many of the programming steps normally associated with addressable panels. It also uses its LEDs as the primary source of zone event information. The screen information is supplementary, to help identify loop device alarm or fault locations, and to help in configuring the panel.

3.3 ADVANTAGES OF AN ADDRESSABLE FIRE ALARM SYSTEM

The table below lists the main advantages of addressable systems, and how our panels use them.

FEATURE	PREMIER AL	PREMIER QUATRO	PROFYRE A2
UNIQUE ALARM IDENTIFICATION	PANEL, LOOP & ADDRESS	PANEL, LOOP & ADDRESS	LOOP & ADDRESS
DEVICE LABEL	20 CHARACTERS	20 CHARACTERS for device, PLUS 20 Characters for the ZONE	20 CHARACTERS
PREALARM	PROGRAMMABLE LEVEL	PRESET @ 45	PRESET @ 45
DETECTOR SENSITIVITY	PROGRAMMABLE (INCLUDING DAY/NIGHT SENSITIVITY)	PRESET @ 55	PRESET @ 55
ZONE ALLOCATION	PROGRAMMABLE	PROGRAMMABLE	SET BY DEVICE ADDRESS
PROGRAMMING	FULL PROGRAMMABILITY	FULL PROGRAMMABILITY	COMMON OR ZONAL OPERATION ONLY
EVENT LOG	YES (200 EVENTS)	YES (4096 EVENTS)	YES (2048 EVENTS)

While all options are programmable on our Premier AL system, the ProFyre A2 uses pre-configured settings for most options.

Device sensitivity and pre-alarm levels are preset.

To simplify configuration, there is no zone allocation programming. Instead each loop is split into 8 zones, and each device is assigned to a zone by the address set with its 8 way dip switch. The Default setting is:-

PANEL	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8
ProFyre A2 64	Address 1 - 16	Address 17 - 32	Address 33 - 48	Address 49 - 64	N/A	N/A	N/A	N/A
ProFyre A2 126	Address 1 - 16	Address 17 - 32	Address 33 - 48	Address 49 - 64	Address 65 - 80	Address 81 - 96	Address 97 - 112	Address 113 - 126
ProFyre A2 252	Address 1:1 – 1:32	Address 1:33 – 1:64	Address 1:65 – 1:96	Address 1:97 – 1:126	Address 2:1 – 2:32	Address 2:33 – 2:64	Address 2:65 – 2:96	Address 2:97 – 2:126

On the Latest Revision of ProFyre A2 panel the zone boundaries can now be altered, to accommodate zones with larger or smaller device capacities. (See CHANGING A ZONE BOUNDARY in section 12.7)

The loop sounder operation is common by default. But can be altered to zonal operation if required (see CHANGING THE ALARM RESPONSE – SOUNDERS in section 12.8)

This leaves only the device label to be programmed by the installer. This is done with the built in keyboard.

4. USING THIS MANUAL

It is beyond the scope of this manual to teach to teach the user all the intricacies of fire alarm system design. If in doubt about what is required, read BS 5839: Pt 1: 2002 “Fire Detection and Alarm Systems for buildings (UK Code of Practice for System Design, Installation, commissioning and maintenance)” available from the BSI, or at your local reference library. Other national regulations will also give similar guidance.

This manual explains, in a step-by-step manner, the procedure for the basic design and installation of the **ProFyre A2** Range of Fire Alarm Control Panels.

It gives detailed instructions on how to use all the features on this fire alarm panel.

For operational and maintenance information, please refer to document EF.MAN-108 (USER MANUAL, MAINTENANCE GUIDE & LOG BOOK). It also contains a System set-up table, and Installation Certificate, that must be completed by the Commissioning Engineer prior to system handover.

Unlike the User Manual, this Installation Manual must not be left accessible to the User.

4.1 EQUIPMENT GUARANTEE

If this equipment is not fitted and commissioned according to our guidelines, and the relevant National Standards, by an approved and competent person or organisation, the warranty may become void.

5. DESIGNING A SYSTEM

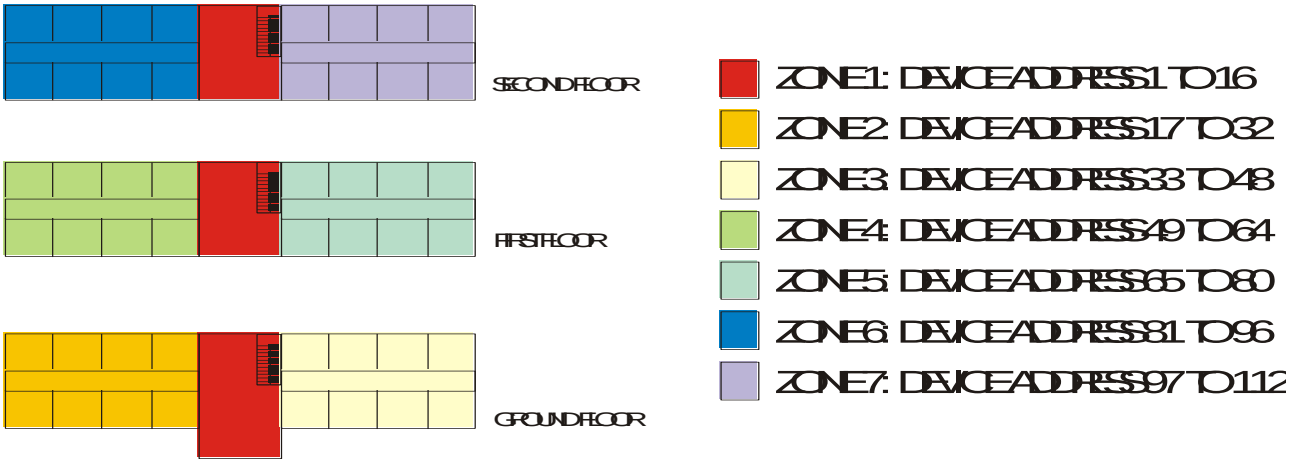
This manual is not designed to teach Fire Alarm System design. It is assumed that the System has been designed by a competent person, and that the installer has an understanding of Fire Alarm System components and their use.

We strongly recommend consultation with a suitably qualified, competent person regarding the design of the Fire Alarm System. The System must be commissioned and serviced in accordance with our instructions and the relevant National Standards. Contact the Fire Officer concerned with the property at an early stage in case he has any special requirements. If in doubt, read BS 5839: Pt 1: 2002 "Fire Detection and Alarm Systems for buildings (Code of Practice for System Design, Installation, commissioning and maintenance)" available from the BSI, or at your local reference library.

5.1 DESIGNING A PROFYRE A2 SYSTEM

Designing a ProFyre A2 System is a fairly straightforward matter. It just takes a bit of thought to zone allocation during the system design stage. We believe that the default configuration of 16 devices per zone (for ProFyre A2 64 & 126), and common alarm operation are suitable for most applications. ProFyre A2 252 has the default configuration of 32 devices per zone, with 4 zones per loop, but these zone boundaries can be moved if so desired. The example (1) below is for a ProFyre A2 126 panel.

1. Decide on the zone allocation for the system. Each default zone can have a maximum of 16 devices fitted. Consider the simplified 3-storey building below.


SECOND FLOOR
FIRST FLOOR
GROUND FLOOR
ZONE 1: DEVICE ADDRESS 1 TO 16
ZONE 2: DEVICE ADDRESS 17 TO 32
ZONE 3: DEVICE ADDRESS 33 TO 48
ZONE 4: DEVICE ADDRESS 49 TO 64
ZONE 5: DEVICE ADDRESS 65 TO 80
ZONE 6: DEVICE ADDRESS 81 TO 96
ZONE 7: DEVICE ADDRESS 97 TO 112

The advantage of this method of zone allocation is that it simplifies the panel set-up by eliminating a programming stage.

(Note that a ProFyre A2 64 can only have 4 zones, so would not be suitable for the above system)

The main disadvantage of this method of zone allocation is the maximum zone capacity of 16 devices. If a zone has more than 16 devices it would need to be split into smaller zones. Similarly, a zone with only one device would leave 15 empty addresses on that zone.

To overcome this limitation, the ProFyre A2 now allows the zone boundaries to be moved. (See CHANGING A ZONE BOUNDARY in section 12.7). NOTE: When changing the zone boundaries, consider if there are likely to be extra devices added to that zone before commissioning is complete, and whether it is worth allowing 2 or 3 empty addresses in a zone.

2. Sounder operation. On the ProFyre A2 Panels, the default setting is common sounders, i.e. an alarm signal from any device will activate all sounders. If zonal sounder operation is required the ProFyre A2 can now configure sounders to trigger zonally when an alarm comes from a detector, a call point, or both (see CHANGING THE ALARM RESPONSE – SOUNDERS in section 12.8).

If more sophisticated sounder & I/O operation is needed, ask your dealer about the Premier Quatro & Premier AL Fire Alarm Panels.

3. Whenever possible, give each device as descriptive a label as possible. The better the description, the easier it is to locate in the event of an alarm. The panel allows 20 characters. It may be necessary to use abbreviations to achieve the required label.

4. Keep the design of the system, and any changes to it well documented. This makes it easier to trace any configuration errors during installation & commissioning

6. INSTALLING THE SYSTEM

6.1 CONSIDERATIONS BEFORE INSTALLATION

6.1.1 MOUNTING THE CONTROL PANEL

The control panel should be installed in accordance with the following recommendations:-

- The panel should be close to the main entrance of the building, so that it can be viewed by any fire-fighting personnel entering the building.
- It should be fitted to a sturdy wall that will not flex unnecessarily.
- It should be mounted at eye level, in order for it to be viewed without need of a ladder.
- It should be installed in a dry, weatherproof place, preferably NOT in direct sunlight.
- It should be easily accessible, so that the responsible person can perform their regular fire alarm checks.

6.1.2 RECOMMENDED CABLE TYPES AND THEIR LIMITATIONS

All wiring must be installed to meet BS5839: Pt1: 2002 and BS 7671 (Wiring Regs) standards. Other National standards of fire alarm system installation should be adhered to where applicable.

Screened cables should be used throughout the installation to help shield the Panel from outside interference and ensure EMC compatibility.

The two categories of cable according to BS5839: Pt1: 2002, Clause 26 “Fire Detection and Alarm Systems for Buildings (Code of Practice for System Design, Installation and Servicing)” are:

Standard fire resisting cable – to PH30 classification of EN 50200

Enhanced fire resisting cable – to PH120 classification of EN 50200

(Note that all cables should be at least 1mm^2 cross section

On the ProFyre A2 Panel the general recommendation would be to use standard fire resistant cable, such as ProFyre Alarm Systems Fire Defence Cable, Firetuff™ , FP200 or any equivalent. These cables are screened, and will provide good EMC shielding when properly grounded at the panel. Certain system specifications may demand the use of a particular type of cable and due regard should be paid to this fact. For non-BS5839 installations, other cable types may be suitable.

Depending on the environment, the cables may need mechanical protection (such as a conduit).

6.1.3 MAINS WIRING RECOMMENDATIONS

The Mains supply to the FACP is fixed wiring, using **Fire resisting** 3-core cable (Between 1 mm² and 2.5mm²) or a suitable 3-conductor system, fed from an isolating double pole switch fused spur, fused at 3A. **IT SHOULD NOT BE CONNECTED THROUGH AN RCD.** This should be secure from unauthorised operation and be marked ‘FIRE ALARM: DO NOT SWITCH OFF’. The supply must be exclusive to the Fire Panel. **MAKE SURE ANY SPARE ENTRY HOLES ARE COVERED WITH THE GROMMETS PROVIDED.**

For information on how to connect Mains to the Panel’s Power Supply PCB, see page 11.

Also refer to rating information on the mains cover inside the FACP.

6.2 FIRST FIX

6.2.1 MOUNTING THE FIRE ALARM PANEL

The ProFyre A2 comes with many cable entry holes. If another entry hole is required, it is strongly recommended that the panels door be removed to avoid accidental damage. Also, the termination and Power Supply PCBs should be removed and stored in a safe place. This would also help while fixing the back box to the wall.

6.2.2 FIXING THE BACK BOX TO THE WALL

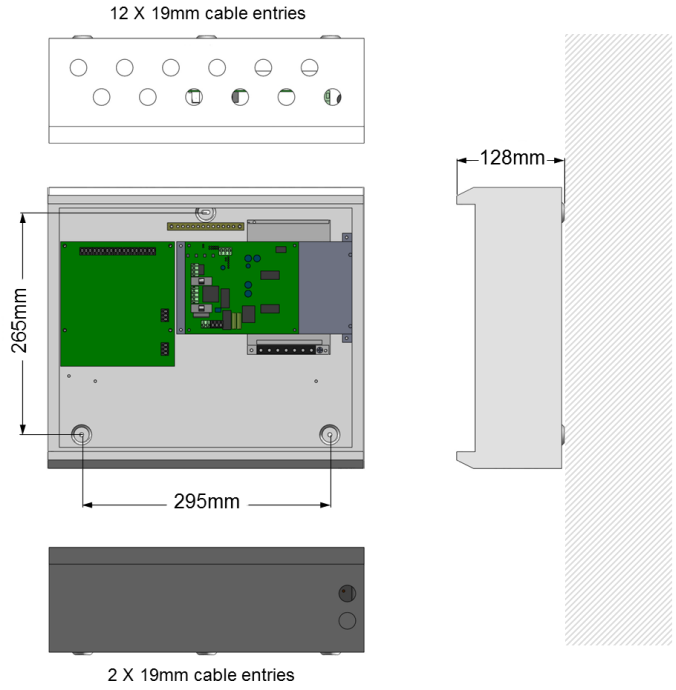


Figure 2: Plan view inside the enclosure without PCBs. Side view for surface installation.

- Fix the enclosure to the wall using the three mounting holes provided.
- Check the build & condition of the wall to decide a suitable screw fixing.
- The mounting holes are designed for No 8 roundhead or countersunk woodscrews (or similar).
- Remove any debris from the enclosure.
- Take care not to damage the FACP during installation.

6.2.3 PLANNING CABLE ENTRY

Fig.2 above shows the location of the cable entries to facilitate planning of wiring (home runs) to be brought to the panel.

The grommets can be easily removed by a push from inside the control panel box.

If a grommet is removed, fill the hole with a brass cable gland. If any knockout is removed, but subsequently not used, it should be covered up.

The 230Va.c. Mains cable must be fed into the enclosure via one of the cable entries at the top right corner of the back box. (Refer to “Connecting the Mains” on Following Page).

6.2.4 CONNECTING THE MAINS POWER

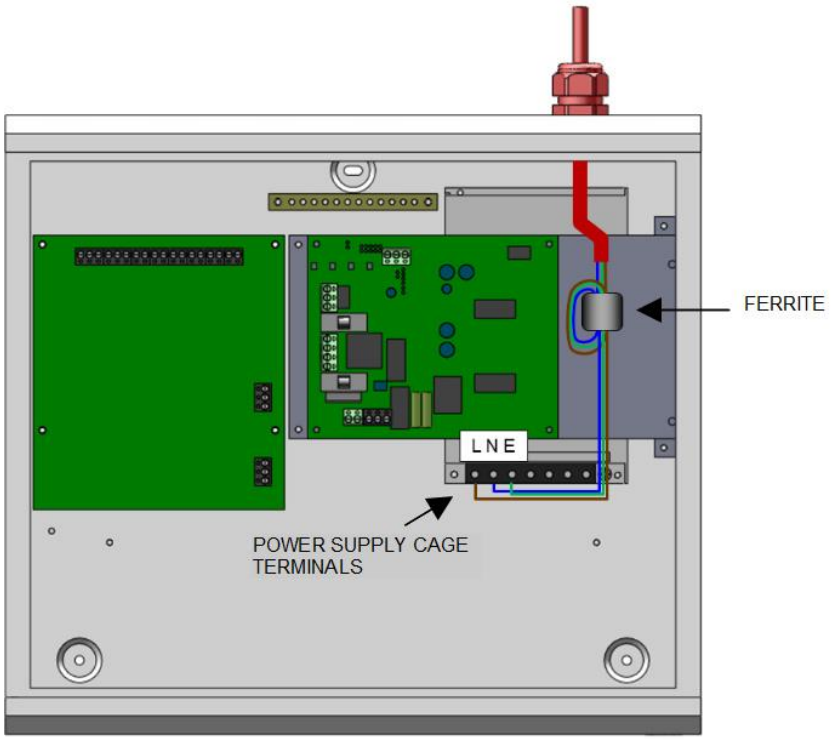


Figure 3: Power Supply PCB layout and Mains connection details

The panel should be connected to 230V AC by a 3A rated spur to the fuse box with 1mm2 to 2.5mm2 3-core cable. Nothing else should be connected to this supply. The cable should be fire resistant.

Having entered the panel via the cable gland, the mains cable should be passed twice through the provided ferrite. This is made easier by removing the outer insulation. The cable is then connected to the Live, Earth and Neutral connections marked on the power supply cage. The Mains is protected by an INTERNAL fuse on the PSU cage. (This fuse is not user replaceable)

The incoming mains cable should be kept separate from the addressable loop cables to help minimise mains interference.

MAKE SURE ANY SPARE ENTRY HOLES ARE COVERED WITH THE PLASTIC GROMMETS PROVIDED

It is advisable to apply power to the panel before connecting any devices, to check for correct operation, and to familiarise yourself with the fire alarm panels controls.

6.2.5 CONNECTING THE BATTERIES

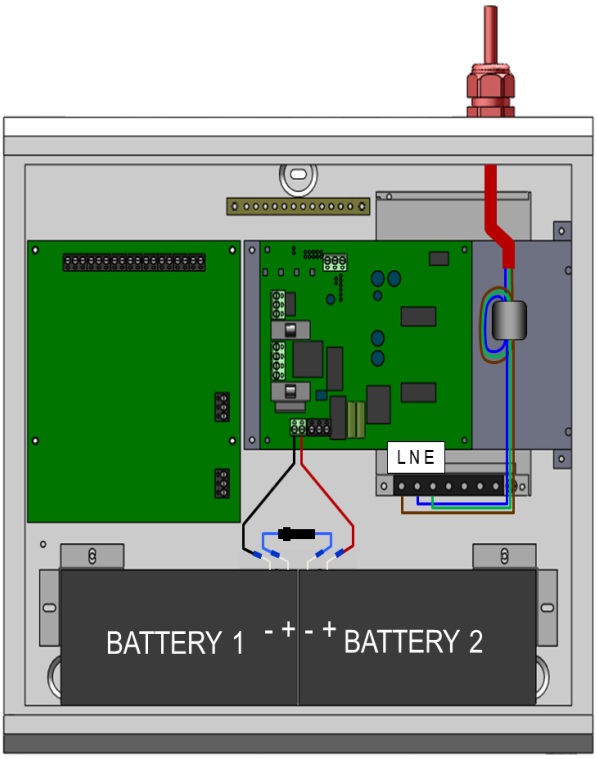


Figure 4: Battery location and connection details

Although there are many sizes of suitable battery, the sizes we usually recommend for the PROFYRE A2 are 12V 7Ah or 12V 12 Ah, depending on the load.

To calculate the exact requirement, use the equation in section 20.1, STANDBY BATTERY CALCULATIONS

The two batteries are wired in **series** to give **24 Volts**.

Connect the **–ve** of Battery 1 to the **black** battery charger lead.

Connect the **+ve** of Battery 2 to the **red** battery charger lead.

The +ve of the first battery is connected to the -ve of the second battery using the FUSED link wire supplied.

When fitting the batteries, take care not to damage the temperature monitoring thermistor (next to the charger lead connections). This is used to prevent overcharging the batteries in high ambient temperatures.

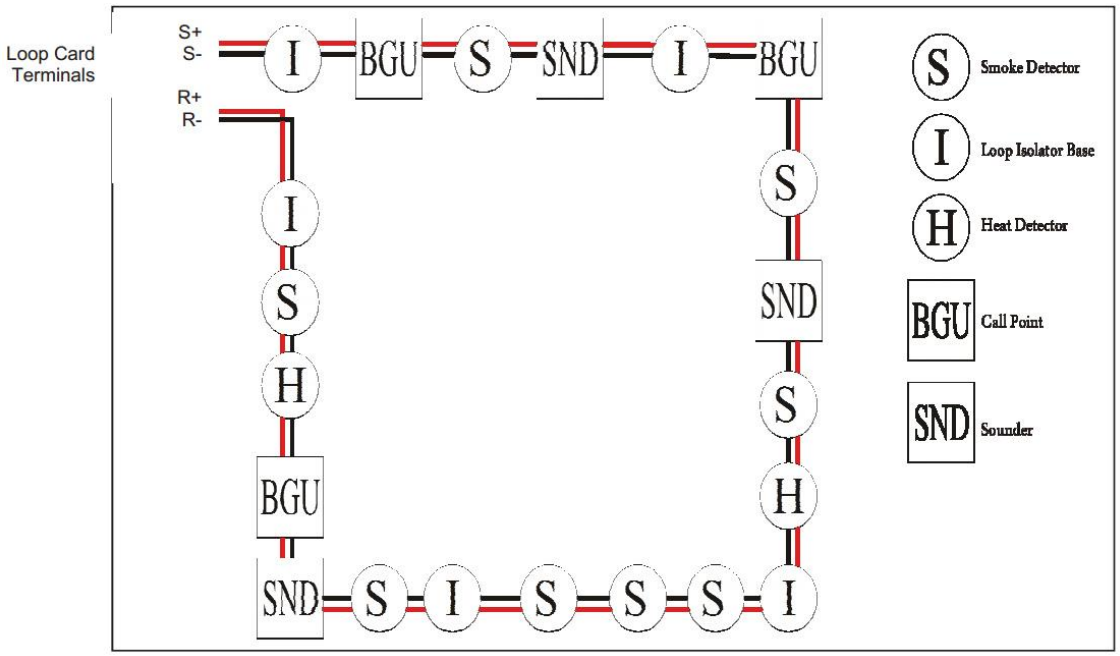
Recommended Battery Types:

Small / Lightly loaded systems – Powersonic 12V, 7 Ah;
Heavily loaded systems, or systems requiring longer stand by – Powersonic 12V 12 Ah.

Other makes and sizes of battery may be suitable.
Calculate the standby requirements to determine the most suitable size of battery

7. ADDRESSABLE LOOP WIRING

The ProFyre A2 64 and 126 can connect to one addressable loop. Addressable detectors, addressable call points, addressable loop powered sounders and several other interface units can be connected to this loop. A MAXIMUM OF 64 DEVICES CAN BE CONNECTED TO THE LOOP WHEN POWERED BY THE PROFYRE A2 64 PANEL, AND 126 DEVICES WHEN POWERED BY THE PROFYRE A2 126 PANEL. The ProFyre A2 252 panel can connect to one or two loops. A MAXIMUM OF 126 DEVICES CAN BE CONNECTED TO EACH OF THE TWO LOOPS. We recommend that the first and last devices on a loop have isolator bases fitted. Also the last device on each zone should have an isolator fitted. This is to prevent a short circuit



fault in one zone affecting another zone.

Note that some Devices (for example, a sounder controller circuit) may require a separate 24 volt supply to operate.

A maximum of 32 loop-powered addressable sounders or sounder bases are permitted on a loop. On the ProFyre A2 Panel, Sounder Bases are configured as common sounders, unless the Sounder Base is used with the Alarm Verification feature (see Sections 8 & 13).

Short circuit isolators should be used to prevent losing the whole loop in the event of a single short circuit fault. They should be fitted to each zone boundary, such that any short circuit will only affect the devices in 1 zone.

The termination of each wiring circuit must be as indicated on the main PCB (See Fig 6). The Earthing of the cable screens should be as shown in Fig 6.

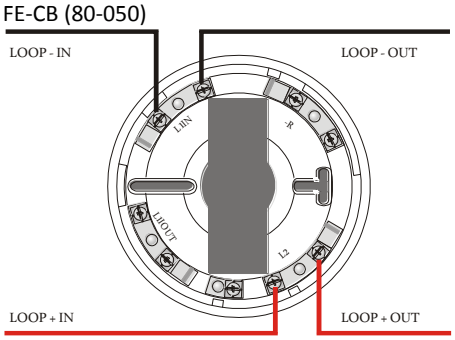
Pre-Commissioning Cable Checks

- +ve in to +ve out less than 24 ohms.
- -ve in to -ve out less than 24 ohms (may need to temporarily disable isolators to measure).
- +ve to –ve greater than 500k ohm.
- +ve to Earth greater than 1M ohm.
- -ve to Earth greater than 1M ohm.
- +ve to –ve less than 50 mV pickup (on AC & DC scales).

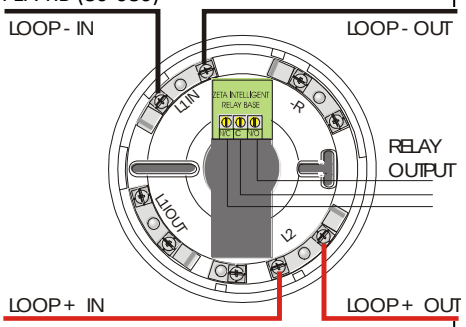
7.1 SPECIFIC DEVICE WIRING INSTRUCTIONS

All products will come with their own wiring instructions. This should be used when connecting a product. But as a general guideline, here are the connection details of most ProFyre Addressable products. Please note that if the Securetone 2 sounder is used as a base sounder, the flying leads must be connected to the base of the associated detector.

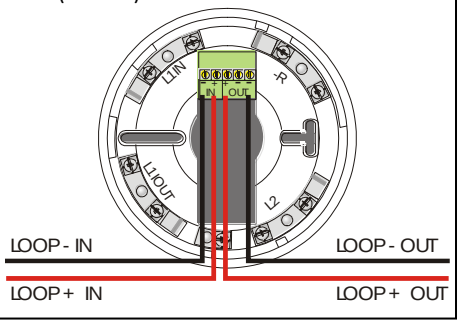
ProFyre Common Base
FE-CB (80-050)



ProFyre Addressable Detector Relay Base
FEA-RB (80-080)



ProFyre Loop Isolator Base
FE-IB (80-090)



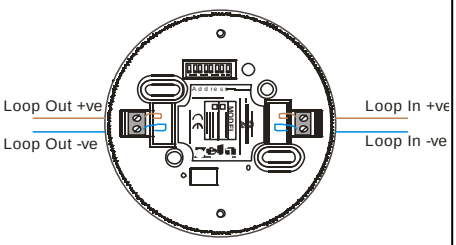
Note that on the ProFyre Loop Isolator Base, the loop wiring connects to the terminal block on the PCB and NOT to the Base Spring Screws.

The terminals are marked + & - in, and +,- &- out.

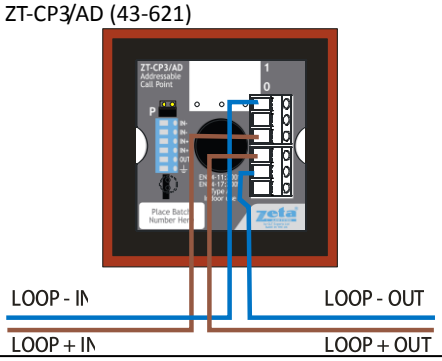
The second –ve contact can be used during commissioning to check the loop integrity.

(Connect the –in to the spare – out. Repeat for all isolators. Measure –ve line resistance with a DVM. Return the –in cable to its original terminal block when tests completed.)

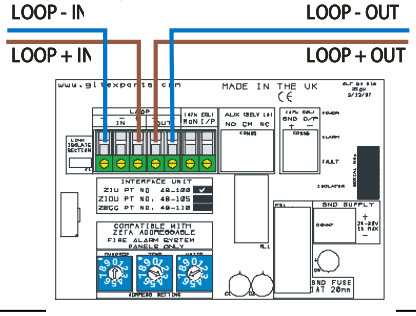
ProFyre Addressable Common Sounder Base
ZTA-CSB (42-510)



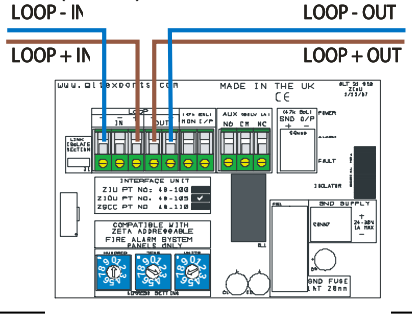
ProFyre Manual Call Point (Resettable)
ZT-CP3/AD (43-621)



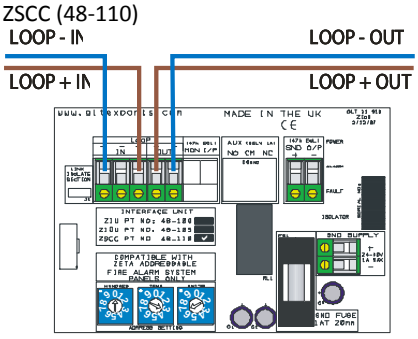
ProFyre Input Unit
ZIU (48-100)



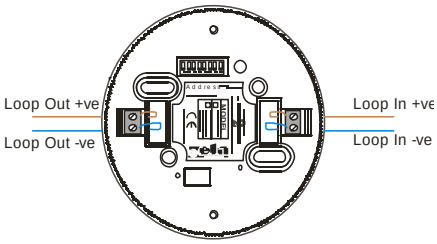
ProFyre Input Output Unit
ZIOU (48-105)



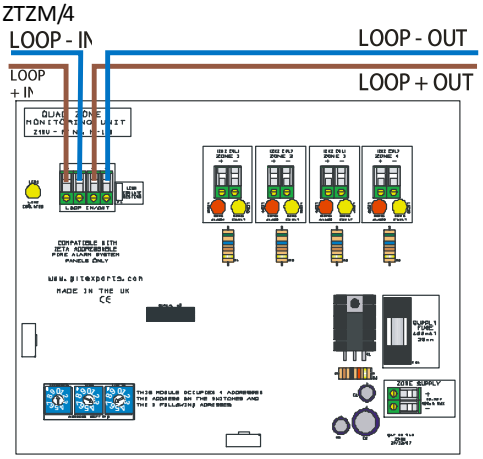
ProFyre Sounder Controller Circuit
ZSCC (48-110)



Securetone 2 Addressable Sounder
ZAS2/R (42-520)
NB Flying leads (not shown) are for connection to detector base when used as base sounder.



ProFyre Zone Monitoring Unit
ZTZM/4



7.2 MAXIMUM LOOP LENGTH RECOMMENDATIONS

With an addressable system, some care must be taken when calculating the appropriate cable gauge for the system.

The main limitation is that during an alarm condition (maximum current draw), the voltage at all devices must be at least 17 Volts with at least 5V of superimposed data signal.

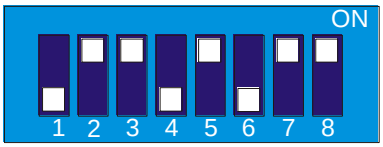
The exact calculation equations are beyond the scope of this manual, because of the distributed load of the sounders on the loop, but the following table gives a rough guide for maximum cable lengths at various current loads for 3 different cable gauges

Maximum Loop Current (in Alarm)	500 mA	400 mA	300 mA	200 mA
1.0mm CSA cable	500m	625m	830m	1250m
1.5mm CSA cable	750m	930m	1250m	1870m
2.5mm CSA cable	1000m	1250m	1660m	2500m

EG. A system with a maximum load of 300mA using 1.5mm cable can have a maximum loop run of 1250m end to end.

7.3 SETTING THE DEVICE ADDRESS (DETECTORS, CALL POINTS & SOUNDERS)

The device address is set with a dip switch on the rear of the device.



The address setting is binary, with the ON position being binary 0 , and the OFF position being binary 1. Switch 8 is not used for setting the address, but sometimes has a device specific function. (check instructions that came with the device)

If you are not familiar with binary, check the table in section 7.4 or use the following rule:

Switch 7 off = add 64,
Switch 6 off = add 32,
Switch 5 off = add 16,
Switch 4 off = add 8,
Switch 3 off = add 4,
Switch 2 off = add 2,
Switch 1 off = add 1.

The example shown would be:
switches 6, 4 & 1
=32 + 8 + 1 = Address 41

7.4 ADDRESS - ZONE TABLE

On the ProFyre A2 64 and 126, each available address corresponds to a zone, with 1-16 being in zone 1 by default, 17-32 being in zone 2 by default, 33-48 in zone 3 by default etc. On the ProFyre A2 252, by default addresses 1-32 are in zone 1, 33-64 in zone 2 etc.

The following table shows the dip switch settings for each address, and the DEFAULT zone that address will be in.

Note that if the zone boundaries on ProFyre A2 252 are changed, the affected addresses will now be in a different

ADDRESS		SWITCHES							ADDRESS		SWITCHES							ADDRESS		SWITCHES						
		1	2	3	4	5	6	7			1	2	3	4	5	6	7			1	2	3	4	5	6	7
0	=	N	O	T	U	S	E	D	43	=	OFF	OFF	ON	OFF	ON	OFF	ON	86	=	ON	OFF	OFF	ON	OFF	ON	OFF
1	=	OFF	ON	ON	ON	ON	ON	ON	44	=	ON	ON	OFF	OFF	ON	OFF	ON	87	=	OFF	OFF	OFF	ON	OFF	ON	OFF
2	=	ON	OFF	ON	ON	ON	ON	ON	45	=	OFF	ON	OFF	OFF	ON	OFF	ON	88	=	ON	ON	ON	OFF	OFF	ON	OFF
3	=	OFF	OFF	ON	ON	ON	ON	ON	46	=	ON	OFF	OFF	OFF	ON	OFF	ON	89	=	OFF	ON	ON	OFF	OFF	ON	OFF
4	=	ON	ON	OFF	ON	ON	ON	ON	47	=	OFF	OFF	OFF	OFF	ON	OFF	ON	90	=	ON	OFF	ON	OFF	OFF	ON	OFF
5	=	OFF	ON	OFF	ON	ON	ON	ON	48	=	ON	ON	ON	ON	OFF	OFF	ON	91	=	OFF	OFF	ON	OFF	OFF	ON	OFF
6	=	ON	OFF	OFF	ON	ON	ON	ON	49	=	OFF	ON	ON	ON	OFF	OFF	ON	92	=	ON	ON	OFF	OFF	OFF	ON	OFF
7	=	OFF	OFF	OFF	ON	ON	ON	ON	50	=	ON	OFF	ON	ON	OFF	OFF	ON	93	=	OFF	ON	OFF	OFF	OFF	ON	OFF
8	=	ON	ON	ON	OFF	ON	ON	ON	51	=	OFF	OFF	ON	ON	OFF	OFF	ON	94	=	ON	OFF	OFF	OFF	OFF	ON	OFF
9	=	OFF	ON	ON	OFF	ON	ON	ON	52	=	ON	ON	OFF	ON	OFF	OFF	ON	95	=	OFF	OFF	OFF	OFF	OFF	ON	OFF
10	=	ON	OFF	ON	OFF	ON	ON	ON	53	=	OFF	ON	OFF	ON	OFF	OFF	ON	96	=	ON	ON	ON	ON	ON	OFF	OFF
11	=	OFF	OFF	ON	OFF	ON	ON	ON	54	=	ON	OFF	OFF	ON	OFF	OFF	ON	97	=	OFF	ON	ON	ON	ON	OFF	OFF
12	=	ON	ON	OFF	OFF	ON	ON	ON	55	=	OFF	OFF	OFF	ON	OFF	OFF	ON	98	=	ON	OFF	ON	ON	ON	OFF	OFF
13	=	OFF	ON	OFF	OFF	ON	ON	ON	56	=	ON	ON	ON	OFF	OFF	OFF	ON	99	=	OFF	OFF	ON	ON	ON	OFF	OFF
14	=	ON	OFF	OFF	OFF	ON	ON	ON	57	=	OFF	ON	ON	OFF	OFF	OFF	ON	100	=	ON	ON	OFF	ON	ON	OFF	OFF
15	=	OFF	OFF	OFF	OFF	ON	ON	ON	58	=	ON	OFF	ON	OFF	OFF	OFF	ON	101	=	OFF	ON	OFF	ON	ON	OFF	OFF
16	=	ON	ON	ON	ON	OFF	ON	ON	59	=	OFF	OFF	ON	OFF	OFF	OFF	ON	102	=	ON	OFF	OFF	ON	ON	OFF	OFF
17	=	OFF	ON	ON	ON	OFF	ON	ON	60	=	ON	ON	OFF	OFF	OFF	OFF	ON	103	=	OFF	OFF	OFF	ON	ON	OFF	OFF
18	=	ON	OFF	ON	ON	OFF	ON	ON	61	=	OFF	ON	OFF	OFF	OFF	OFF	ON	104	=	ON	ON	ON	OFF	ON	OFF	OFF
19	=	OFF	OFF	ON	ON	OFF	ON	ON	62	=	ON	OFF	OFF	OFF	OFF	OFF	ON	105	=	OFF	ON	ON	OFF	ON	OFF	OFF
20	=	ON	ON	OFF	ON	OFF	ON	ON	63	=	OFF	OFF	OFF	OFF	OFF	OFF	ON	106	=	ON	OFF	ON	OFF	ON	OFF	OFF
21	=	OFF	ON	OFF	ON	OFF	ON	ON	64	=	ON	ON	ON	ON	ON	ON	OFF	107	=	OFF	OFF	ON	OFF	ON	OFF	OFF
22	=	ON	OFF	OFF	ON	OFF	ON	ON	65	=	OFF	ON	ON	ON	ON	ON	OFF	108	=	ON	ON	OFF	OFF	ON	OFF	OFF
23	=	OFF	OFF	OFF	ON	OFF	ON	ON	66	=	ON	OFF	ON	ON	ON	ON	OFF	109	=	OFF	ON	OFF	OFF	ON	OFF	OFF
24	=	ON	ON	ON	OFF	OFF	ON	ON	67	=	OFF	OFF	ON	ON	ON	ON	OFF	110	=	ON	OFF	OFF	OFF	ON	OFF	OFF
25	=	OFF	ON	ON	OFF	OFF	ON	ON	68	=	ON	ON	OFF	ON	ON	ON	OFF	111	=	OFF	OFF	OFF	OFF	ON	OFF	OFF
26	=	ON	OFF	ON	OFF	OFF	ON	ON	69	=	OFF	ON	OFF	ON	ON	ON	OFF	112	=	ON	ON	ON	ON	OFF	OFF	OFF

27	=	OFF	OFF	ON	OFF	OFF	ON	ON	**70**	=	ON	OFF	OFF	ON	ON	ON	OFF	**113**	=	OFF	ON	ON	ON	OFF	OFF	OFF
28	=	ON	ON	OFF	OFF	OFF	ON	ON	**71**	=	OFF	OFF	OFF	ON	ON	ON	OFF	**114**	=	ON	OFF	ON	ON	OFF	OFF	OFF
29	=	OFF	ON	OFF	OFF	OFF	ON	ON	**72**	=	ON	ON	ON	OFF	ON	ON	OFF	**115**	=	OFF	OFF	ON	ON	OFF	OFF	OFF
30	=	ON	OFF	OFF	OFF	OFF	ON	ON	**73**	=	OFF	ON	ON	OFF	ON	ON	OFF	**116**	=	ON	ON	OFF	ON	OFF	OFF	OFF
31	=	OFF	OFF	OFF	OFF	OFF	ON	ON	**74**	=	ON	OFF	ON	OFF	ON	ON	OFF	**117**	=	OFF	ON	OFF	ON	OFF	OFF	OFF
32	=	ON	ON	ON	ON	ON	OFF	ON	**75**	=	OFF	OFF	ON	OFF	ON	ON	OFF	**118**	=	ON	OFF	OFF	ON	OFF	OFF	OFF
33	=	OFF	ON	ON	ON	ON	OFF	ON	**76**	=	ON	ON	OFF	OFF	ON	ON	OFF	**119**	=	OFF	OFF	OFF	ON	OFF	OFF	OFF
34	=	ON	OFF	ON	ON	ON	OFF	ON	**77**	=	OFF	ON	OFF	OFF	ON	ON	OFF	**120**	=	ON	ON	ON	OFF	OFF	OFF	OFF
35	=	OFF	OFF	ON	ON	ON	OFF	ON	**78**	=	ON	OFF	OFF	OFF	ON	ON	OFF	**121**	=	OFF	ON	ON	OFF	OFF	OFF	OFF
36	=	ON	ON	OFF	ON	ON	OFF	ON	**79**	=	OFF	OFF	OFF	OFF	ON	ON	OFF	**122**	=	ON	OFF	ON	OFF	OFF	OFF	OFF
37	=	OFF	ON	OFF	ON	ON	OFF	ON	**80**	=	ON	ON	ON	ON	OFF	ON	OFF	**123**	=	OFF	OFF	ON	OFF	OFF	OFF	OFF
38	=	ON	OFF	OFF	ON	ON	OFF	ON	**81**	=	OFF	ON	ON	ON	OFF	ON	OFF	**124**	=	ON	ON	OFF	OFF	OFF	OFF	OFF
39	=	OFF	OFF	OFF	ON	ON	OFF	ON	**82**	=	ON	OFF	ON	ON	OFF	ON	OFF	**125**	=	OFF	ON	OFF	OFF	OFF	OFF	OFF
40	=	ON	ON	ON	OFF	ON	OFF	ON	**83**	=	OFF	OFF	ON	ON	OFF	ON	OFF	**126**	=	N	O	T	U	S	E	D
41	=	OFF	ON	ON	OFF	ON	OFF	ON	**84**	=	ON	ON	OFF	ON	OFF	ON	OFF	**127**	=	N	O	T	U	S	E	D
42	=	ON	OFF	ON	OFF	ON	OFF	ON	**85**	=	OFF	ON	OFF	ON	OFF	ON	OFF									

8. SOUNDERS

The ProFyre A2 panel does not have any conventional sounder circuits on board. The idea of the ProFyre A2 is to connect everything to one circuit, so it only uses addressable sounders.

There are several types of addressable sounder that can be used on the ProFyre A2, all with advantages & disadvantages. Choose the sounder type that is most suitable for the intended application.

8.1 ADDRESSABLE SOUNDERS

These are standard addressable sounders. Each sounder is given a unique address, so that it can communicate with the control panel. Examples include the ProFyre Addressable Maxitone & ProFyre Addressable Securetone 2 sounders.

8.2 ASSOCIATED SOUNDER BASES

Associated sounder bases (also known as platform sounders) do not communicate with the fire alarm panel. They are controlled by the detectors remote output signal. This means that when a panel configures the loop, it cannot see these sounders. The ProFyre A2 assumes that any detector could have one of these sounders connected, so when an alarm signal comes, the panel sends the “turn on your remote output” to EVERY detector. This makes their operation slower than standard addressable detectors. Note that on SOME types of associated sounder, removing the detector will stop the sounder from being able to operate.

If not every detector has a sounder base fitted, it might be possible to speed up the sounder base start/stop time. See CONFIGURING ASSOCIATED SOUNDERS on page 23.

An example of an associated sounder base is the ProFyre Addressable Securetone 2 sounder in shadow mode (switch 8 off).

8.3 ADDRESSABLE COMMON SOUNDER BASE

This type of sounder (ProFyre Common Sounder Base) was designed specifically for use with the earlier ProFyre A2 panels, where only common alarm was available. The sounders all listen to address 126. If they hear the start sounding command, they will all start together. (Of course this means that if the site needs individual sounder control, these sounders are not suitable)

8.4 ADDRESSABLE SOUNDER CIRCUIT CONTROLLER

If conventional sounders or bells need to be fitted, then a sounder circuit controller can be used (ProFyre Addressable Sounder Circuit Controller Unit). It will need to be separately powered. In operation, it will behave the same as an addressable sounder

8.5 COMPARISON OF SOUNDER TYPES

The ProFyre A2 supports 4 general sounder types; addressable, addressable sounder controller, Common sounder base and associated sounder base. All types have advantages & disadvantages.

SOUNDER TYPE	ADVANTAGE	DISADVANTAGE
Addressable	Device is seen by panel (so is monitored by protocol comms)	Tends to be more expensive Uses device address. Can’t be used for alarm verification
Associated (sounder-base)	Doesn’t occupy Device Address Can be used for the new alarm verification mode	Slow start time on heavy loaded loop MAY need detector present to operate.
Addressable Common sounder base	All sounders start instantly, and in sync	No individual control. Can’t be used for alarm verification
Addressable Sounder Circuit Controller	Wide range of devices Devices tend to be cheaper. Can add many sounder circuits to system	Needs Extra Cabling. Needs External PSU Uses device address. Can’t be used for alarm verification

If the site is to operate with common alarm only, then the common sounder base may be the best option.

If you need to use alarm verification, the associated sounder base is needed.

If you need bells or XENON flashers, you will need a sounder circuit controller.

8.6 SOUNDER START TIMES

The ProFyre A2 panel can Start 32 Addressable sounders per loop within the 3 second limit specified in EN54-2. The following information should be considered in order to keep the sounder start time within the EN54 Limits:-

Addressable Common Sounder Base

These are all started by a single command to address 126, so the full loop load of 64 sounders or 48 sounder flashers can be used

Addressable Sounders (Maxitone, Securetone)

These are started individually, so a maximum of 32 addresses can be used. If you need more than 32 sounders on a system, then sounders in the same zone can be grouped at the same address, using shadow mode (Turning switch 8 off). Using this method, up to 64 sounders can be started within the 3 second limit.

Associated Sounders – For Zonal Alarm Operation

These are started individually, so a maximum of 32 addresses can be used. If you need more than 32 sounders on a system, then sounders in the same zone can be grouped at the same address, using shadow mode (Turning switch 8 off). Using this method, up to 64 sounders can be started within the 3 second limit.

Associated Sounders – For Alarm Verification

When used for this function, the sounders can not be grouped together in shadow mode, as they need to be individually triggered. So If more than 32 sounders per loop are used for verification, they should be considered as a local sounder, and further provision should be made for an alarm sounder to cover the same area.

NOTE: For ease of functional checking during installation, the ProFyre A2 panel assumes that every detector found during the loop configuration has an associated sounder base. This allows every sounder to run.

If the system uses associated sounders on some addresses, then the addresses with no sounder should have the associated sounder turned off in order to speed up sounder response time (See Section 12.4)

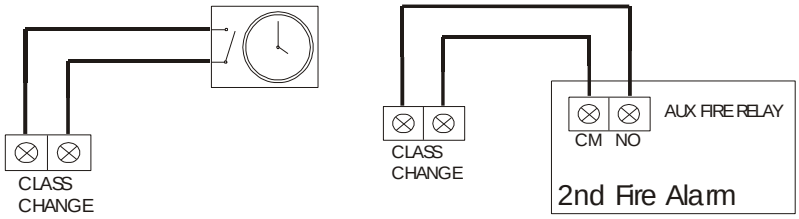
9. AUXILIARY INPUTS & OUTPUTS

9.1 AUXILIARY INPUT WIRING EXAMPLES

There is one non-latching auxiliary input connection on the Fire Alarm Panel.

Class Change Input (CC): This will energise all alarm outputs continuously when the CC terminals are shorted together.

Typical auxiliary input wiring options:



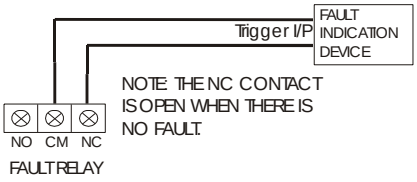
The termination for the above inputs must be as indicated on the main PCB (See page 15). The Earthing of the cable screens should be as shown on page 9.

9.2 AUXILIARY OUTPUT WIRING

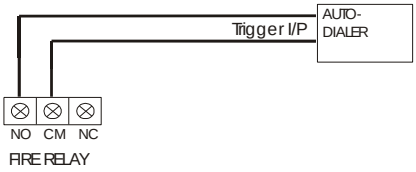
Auxiliary Fire Relay (AUX): This is a SELV volt free relay that operates in the alarm condition. It can be connected to emergency lights, local fire fighting equipment such as sprinkler systems, magnetic door holders, air conditioning shut off, etc. Extra alarm relays can be achieved by fitting extra ZIOUs to the addressable loop.

Fault Output (FAULT): This is a SELV volt free relay that operates in the Fault condition. It is Normally Energised, which ensures it can give a fault signal, even in the event of total power loss.

Typical auxiliary output wiring:



The fault relay is used to connect to a remote indication device



The fire relay can be used to connect to various devices which are activated on a fire alarm. e.g. Auto dialler , magnetic door release (24V), sprinkler system etc.

The Earthing of the cable screens should be as shown on the following page.

10. FIELD DEVICE TERMINATION

10.1 TERMINATING THE WIRING

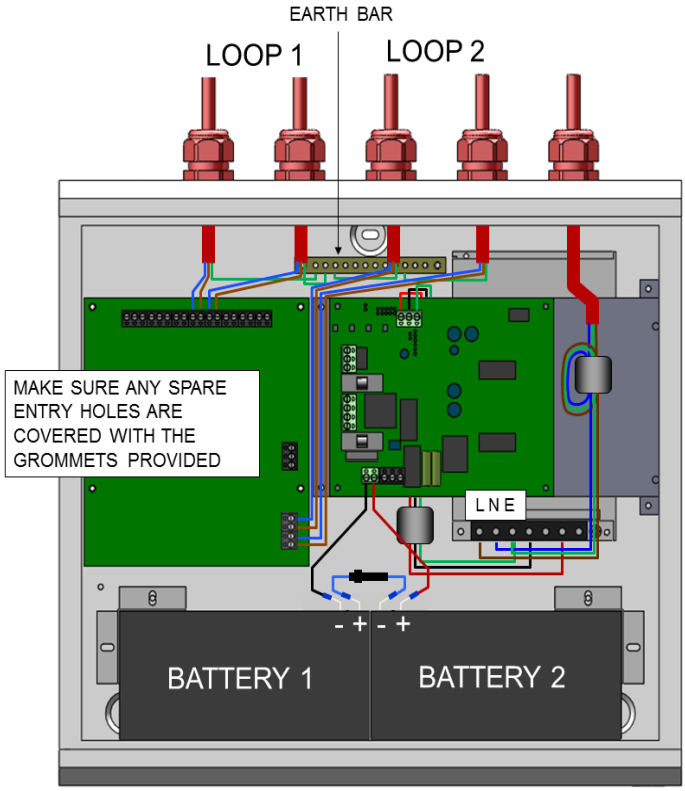


Figure 6: Cable connections

All cables entering the enclosure should have cable glands, which will prevent unwanted openings in the enclosure.

The Addressable Loop circuits should be connected to the appropriate connector block on the Termination PCB.

All cable screens should be terminated at the brass earthing strip as shown in Figure 6 .

11. OTHER CONNECTIONS

11.1 REPEATER CONNECTION

The ProFyre A2 has an RS485 connection for a serial repeater. The repeaters are display only (no control). A single repeater can be powered from the 24V DC outputs on the panel's Power Supply Unit (A or B). If 2 or more are to be connected, then they must be powered from external 24V power supplies. The panel supports up to 4 repeaters.

Connections

See Section 21 for the serial repeater connections.

11.2 SERIAL PRINTER CONNECTION

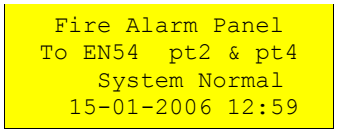
The ProFyre A2 has an RS232 Serial output that transmits panel events as they occur. It can connect to the ProFyre TCP/IP Interface (Ask distributor for more details), or a serial printer. The recommended printer is an Epson LQ300 II+. The serial port on the ProFyre A2 is configured to this printer's default settings. See also Section 21.

CONNECTIONS	
PROFYRE A2	**25 PIN D CONNECTOR**
TX	Pin 3 (RX)
RX	Pin 2 (TX)
GND	Pin 7 (GND)
CTS	Pin 4 (RTS)
DSR	Pin 20 (DTR)

SERIAL PORT SETTINGS	
SETTING	**VALUE**
Baud Rate	19200
Data Bits	8
Stop bits	1
Parity	NO
Flow Control	Hardware

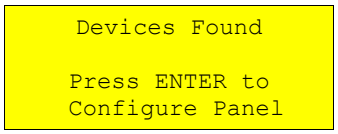
12. CONFIGURING THE PROFYRE A2 FIRE ALARM PANEL

12.1 CONFIGURING THE LOOPS

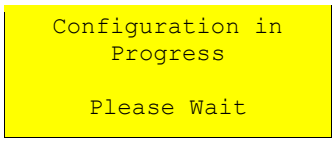


12.1.1 FROM A BLANK PROFYRE A2 PANEL

1. After the system has been installed, and the cabling checked and the addresses of each device set, connect Loop 1 to the CIE termination PCB (connection 3 as shown in Section 21.1), and Loop 2 (if required) to the CIE termination PCB (connection 10), and power up the system (mains & batteries). The LCD should say "System Normal", and only the green Power LED will be lit. After a few seconds, the panel will find all the new devices & report them unconfigured.

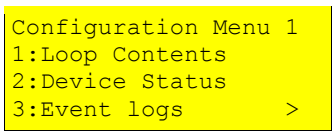


2. Press the enter button to configure the loop. The panel will show Configuration in progress for about 9 seconds, then it will then return to the system normal screen.



The loop is now configured.

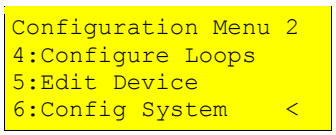
12.1.2 FROM A PREVIOUSLY CONFIGURED PANEL



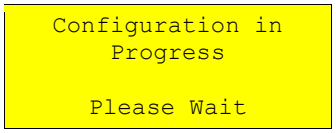
1. Press Enter button. This will bring up Configuration Menu 1 (the user menu). In this Menu there are options to view loop contents, view the status of each device, or view the event log. The arrow in the bottom left hand corner shows that pressing NEXT will bring up a new screen

(Note that if the panel has a fault on the screen, pressing enter will give fault details. Press cancel from the details screen to enter configuration Menu 1).

2. Press NEXT button. This will prompt for the access code to enter Configuration Menu 2 (the engineer menu). The access code for the ProFyre A2 is 369.

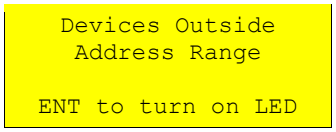


3. The panel now shows Configuration Menu 2. In this menu there are options to Configure the loops, to edit each device, and to configure the system options. The arrow in the bottom left hand corner shows that pressing PREVIOUS button will return to Configuration Menu 1.



4. Press button 4 to configure the loop. The panel displays configuration in progress, Please wait. It will return to Configuration Menu 2 when completed.

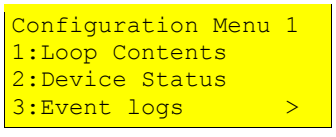
12.1.3 REDUCED LOOP PROFYRE A2 PANELS



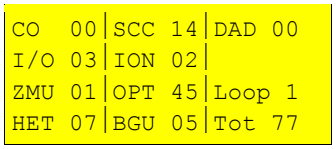
For the reduced loop capacity ProFyre A2 panels (EG ProFyre A2 Micro, or ProFyre A2 64), it is possible to address a device outside the panels range. Previous versions of ProFyre A2 panel would expect the user to find this problem by checking the device contents screen, and comparing to system drawings, but this latest version will warn that there are devices outside the panels address range, and help identify them.

12.2 VERIFYING THE LOOP CONFIGURATION

1. Go to Configuration menu 1 (either Press PREVIOUS button, from Menu 2, or press ENTER from System normal screen.



2. Press button 1 to view the loop contents. It lists the number of each type of device, the number of Double Addresses (DAD) on the system, the loop number (Loop 1 only), and the total number of devices on that loop. Check that the number of devices seen compares to the number expected. If it is different, refer to the fault finding guide.

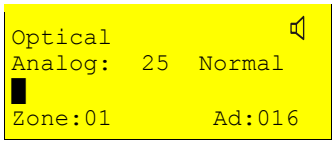


3. The panel is now configured, and will function as a basic system, (press Cancel until screen

shows system normal to run the panel), but it is more useful to enter device labels, to give a more precise location of an alarm device. We recommend that the device labels be entered to allow the panel to be more user friendly during normal operation.

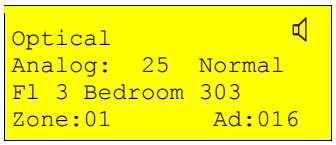
12.3 LABELLING THE LOOP DEVICES

1. To add a label, go to configuration menu 2 as described above. Select option 5 to Edit Device. Use Next / Previous to select the first device to edit. Press Enter, and a cursor will appear at the start of the 3rd line. Type in the 20 character label for this device, using the caps lock as necessary.

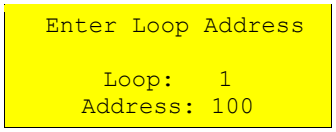


2. Press enter when the label has been entered. Press Next to edit the next device.

3. To skip many addresses, press 1 (for loop 1), or 2 (for loop 2 on a 2 loop ProFyre A2.) The Panel will then prompt for the address. Type the address and press enter. The panel will now jump to this address.

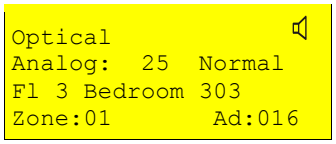


NOTE: For many installations, only these configuration steps are required.



12.4 CONFIGURING ASSOCIATED SOUNDERS

On the ProFyre A2, all detectors are treated as if they have an associated sounder base during the initial configuration (indicated by the sounder symbol in the top right hand corner of the edit device screen) . The panel will send the “activate base sounder” command to all address with this sounder symbol in the event of an alarm.

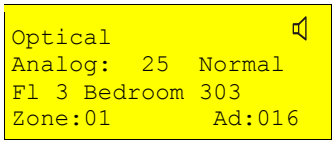


If a loop contains a large number of detectors, and a small number of associated sounder bases, then the sounders might take a long time (between 4 & 8 seconds) to start.

If this scenario exists, it is possible to speed up operation as shown below. (Note: if every detector has a sounder base, or if most of the detectors have a sounder base this “speed up operation” will have little or no effect.

1. Press enter, NEXT, followed by 369 to enter Configuration Menu 2. Select option 5 to edit device status. Select a detector that does NOT have a sounder base attached.

2. Press the Disablement SELECT button. The sounder symbol turns off to show that this detector no longer has an associated sounder. (Pressing select again will continue to toggle the sounder on & off.)

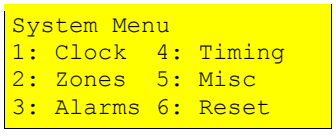


3. Repeat for all detectors that do not have an associated sounder base fitted.

If a system had say 40 detectors, but only 20 with an ASSOCIATED sounder base, configuring the sounders as shown above should half the sounder start time.

12.5 SETTING TIME AND DATE

To set the time & date, enter Configuration Menu 2 and select Configure System (6). The System Menu is now displayed. Select option 1 to set time & date. Enter the Day, Month, Year, Hour & Minutes as prompted, and press enter to save, or Cancel at any time to exit.



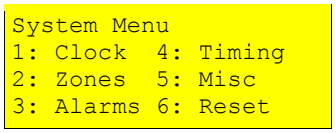
12.6 SETTING A CUSTOM BANNER

On the ProFyre A2, the default screen shows ProFyre A2 64 or ProFyre A2 126 or ProFyre A2 252 on the 1st line of the LCD (depending on panel version), and Fire Alarm Panel on the 2nd line. This can be changed to any 2 lines of 20 Characters that are required. From Menu 2, select configure system, followed by MISC. In the Misc Menu, type **NaMe** (Caps lock ,**N** , Caps lock, **a**, Caps lock ,**M**, Caps lock, **e**). Then type the first line of text, followed by enter, then the second line of text, followed by enter. This message will now be the screen message when the panel is running normally, with no faults or alarms present.

12.7 CHANGING A ZONE BOUNDARY

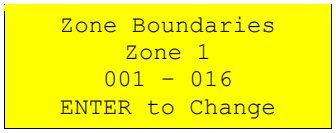
The ProFyre A2's default zone allocation may not be suitable for every installation. The Zone boundaries can now be altered as follows:-

1. Enter Configuration Menu 2 & select System Menu (option 6)



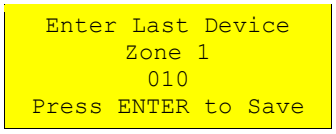
2. Select Option 2 (Zones). The screen will show the Zone boundaries selection screen. The screen shows the currently selected zone, and the range of addresses within that zone e.g. Zone 1 consists of addresses 1 to 16.

3. Use Previous & Next buttons to select the zone to change, then press ENTER.



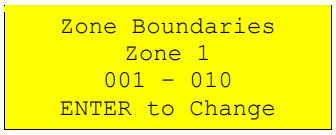
4. The Screen now prompts for the new last address of that zone to be entered. (On a 2 Loop ProFyre A2, the panel will prompt for the loop number to be entered first).

5. Type in the address & press ENTER to save, or press CANCEL to keep the existing Address.



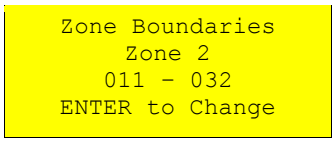
6. The Zone will now change to the selected boundary, with the first device of the next zone changing accordingly, e.g. just changing zone 1 last device to 10 would result in zone 1 being addresses 1 to 10, Zone 2 being 11 to 32, zone 3 being the default 33 to 48 etc.

NOTE: If the building plans have not been finalised, it would be wise to leave a few spare addresses at the end of each zone, just in case extra devices need to be added.



The ProFyre A2 COULD use all addresses in a single zone, but it is good practice to limit a zone to 32 or less detectors (to avoid an unacceptably large zone search area). The minimum number of addresses per zone is 2.

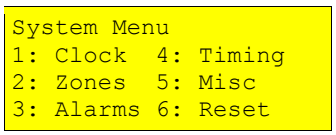
All 8 zones do not need to be use, i.e. the 126 device version could be configured as 6 zones of 21 devices, leaving zones 7 & 8 void.



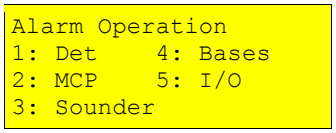
NOTE: Zones 1 to 7 must have a minimum of 2 addresses per zone.

12.8 CHANGING THE ALARM RESPONSE – SOUNDERS

By Default, the ProFyre A2 uses a common alarm configuration, i.e. any alarm sets off all sounders. This default operation may not be suitable for every installation. As alarms from Manual Call points often need to be treated differently, the operation of detectors & call points can be configured separately. Enter the Configuration Menu 2 & select System Menu (option 6) and select option 3 (Alarms).

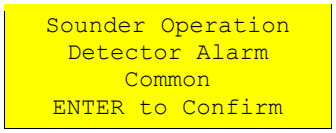


NOTE that if ADDRESSABLE COMMON SOUNDER BASES are used, the SOUNDER Response can ONLY be COMMON, as these sounders cannot be individually controlled.



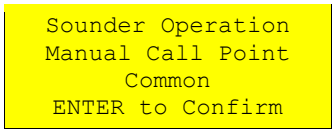
12.8.1 CHANGING DETECTOR ALARM RESPONSE

To change the alarm response of detectors, select option 1. The following screen is Shown. Use Prev/Next buttons to scroll between the options Common and Zonal. Press enter to confirm.



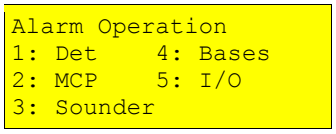
12.8.2 CHANGING MCP ALARM RESPONSE

To change the alarm response of manual call points, select option 2. The following screen is shown. Use Prev/Next buttons to scroll between the options Common and Zonal. Press enter to confirm.



12.8.3 ZONAL SOUNDER TO COMMON SOUNDER DELAY

If Zonal sounder operation is selected, in the event of an alarm, the sounders will only ring in a certain part of the building (the zone that signalled the alarm). Sometimes there is a requirement to start all the other sounders if the alarm continues for a given time. On the ProFyre A2 system, we refer to this as the Zonal to Common sounder time.



Select option 3 from the alarm operation menu. This zonal to common sounder time can either be disabled, i.e. alarms stay zonal, or it can be enabled, i.e. all the sounders will start after the programmed time delay.

```
Sounder Operation
Zonal-Common Time
    Disabled
ENTER to Confirm
```

To alter this delay, go to the System Menu and select option 4 (Timing)

```
System Menu
1: Clock  4: Timing
2: Zones  5: Misc
3: Alarms 6: Reset
```

The panel will bring up the following menu. Select option 1 (Zonal to common)

```
Alarm Timing
1: Zonal to Common
2: Alarm Verify
```

The panel will now show the currently selected delay time. This can be set between 30 seconds and 10 minutes, in 15 second increments, using the previous and next buttons. Press enter to confirm the selected time.

```
Zonal-Common Time
      0:30

ENTER to Confirm
```

12.8.4 ASSOCIATED SOUNDER BASE SETTINGS

On previous ProFyre A2 Panels, associated sounder bases have always been common acting. There is now an option for them to be zonal. In the Alarm Operation Menu, select option 4 (bases).

```
Alarm Operation
1: Det    4: Bases
2: MCP    5: I/O
3: Sounder
```

Press Prev / Next to select common or Zonal operation, then press enter.

```
Sounder Operation
  Sounder Bases
     Common
ENTER to Confirm
```

12.9 CHANGING THE ALARM RESPONSE – I/O UNITS

Because a system could have several I/O units, each reacting to different types of events the ProFyre A2 system adopts the following method for configuring I/O units:-

1. Select a default I/O unit operation (This is done from the Alarm Operation Menu)

This will then be the default operation of all I/O units on the system.

2. Any I/O units which need a different operation can be edited individually from the edit device screen

12.9.1 TYPES OF I/O UNIT OPERATION

The ProFyre A2 now has the following types of I/O operation:-

I/O Com	Operates output on ANY alarm
I/O Zn-D	Operates its output on a DETECTOR alarm from its own ZONE
I/O Zn-A	Operates its output on any alarm from its own ZONE
I/O Addr	Operates its output ONLY when its own INPUT is triggered
I/O Link	Special type used for Inter-panel link. Output operates on any alarm , EXCEPT from its own address, AND the input is non latching and behaves similar to class change.

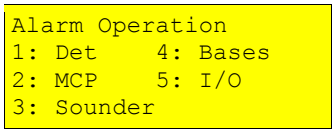
12.9.2 SETTING DEFAULT I/O UNIT OPERATION

To set the ProFyre A2 panels default I/O operation, enter configuration menu 2, then select config system to bring up the system menu.

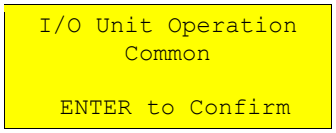
```
System Menu
1: Clock  4: Timing
2: Zones  5: Misc
3: Alarms 6: Reset
```

Select Option 3 (Alarms) to bring up the alarm operation Menu.

Select option 5 (I/O). This brings up the following screen.



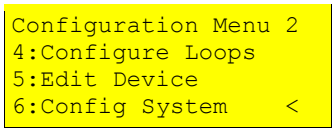
Press Prev & Next to select the default operation, then press enter.



12.9.3 SETTING INDIVIDUAL I/O UNIT OPERATION

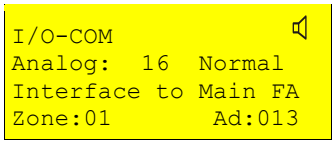
To alter the operation mode of an individual I/O unit, go to configuration menu 2.

Select Edit Device.



Scroll to the required Address.

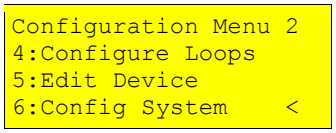
Press V to cycle through the different Variations of I/O configuration.



12.10 SETTING THE LCD LANGUAGE

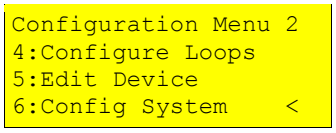
From Configuration menu 2, Select configure system (option 6).

Then from the Misc Settings menu, select option 1 (Language).

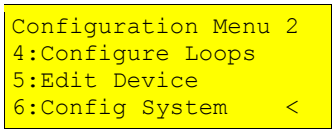


Pressing Prev / Next will scroll through the available languages.

The currently supported languages are:-



- English
- Spanish
- Portuguese
- Hungarian
- French

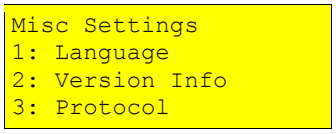


Other languages are available on request.

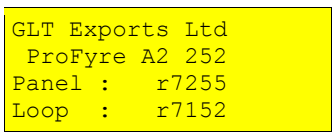
12.11 SOFTWARE VERSIONS

From Configuration menu 2, Select configure system (option 6) .

Then from the Misc Settings menu, select option 2 (Version Info).



The panel will display the software versions in its two Microcontrollers, one for the main functions and one for the Loop Driver. This information may be useful for technical support in the Event of any problems occurring with the Control Panel.



(Note that the revision number is an internal reference number. It does not mean that there have been 7000+ software revisions)

12.12 PROTOCOL

The ProFyre A2 Panel now supports 2 addressable protocols. The Original ProFyre Addressable Protocol, and the new ProFyre Mk II Protocol. The New protocol has been introduced to allow future development of our products, but is unfortunately incompatible with the original Protocol.

Check the information below and select the correct protocol for the devices you have on the system.

Original ProFyre Detectors (1 LED)

FEAO2000 FEAH2000

Use **STANDARD** Protocol setting

ProFyre Extra Detectors (2 LED)

FEAOE2000 FEAHE2000

Use **STANDARD** Protocol setting

ProFyre MK II Detectors (8 LED)

Use **PROFYRE MK II** Protocol setting

Changing the protocol

From Configuration menu 2, Select configure system (option 6)

Then from the Misc Settings menu, select option 3 (Protocol)

Press Prev / Next to select Standard or ProFyre-Mk2 protocol, and then press ENTER.

```
Select Protocol
 ProFyre-Mk2

ENTER to Confirm
```

NOTE: The Factory Default option will reset the panel to the ProFyre Mk II Protocol. If your system is running the standard ProFyre protocol devices, then you will need to change the protocol (as described above) before the panel will see the devices.

13. ALARM VERIFICATION

The ProFyre A2 now includes an option to use alarm verification.

It is intended for use in apartments, and similar buildings, where it is desirable that an alarm from one apartment (or area) would need to be confirmed before the whole system goes into alarm.

13.1 HOW ALARM VERIFICATION WORKS

The verification function works as follows:-

1. Any SMOKE detector on the system can be set to verify an alarm.
2. If a detector with the verification setting senses smoke, the detector alarm led will turn on. If the detector has an associated sounder base, the sounder will turn on with the Alert tone (i.e. pulsed) rather than the Evacuate tone. The ProFyre A2 panel's screen will show "Confirming alarm" and the PRE-ALM LED will start flashing.
3. If the detector drops below the alarm level within the programmed verification time (30 seconds to 3 minutes 45 seconds), the sounder will turn off and the PRE-ALM LED will turn off, but the panel will continue displaying "Confirming Alarm" for at least 5 minutes. The buzzer will also continue to operate as long as the "Confirming Alarm" message is displayed.
4. If the detector stays in alarm by the end of the verification delay, the system will go into full alarm.
5. If another detector WITHOUT verification setting or a call point goes into alarm, the panel will go straight into full alarm.

With this method of operation a "cooking alarm" in one apartment will alarm locally, giving the apartment occupants a chance to clear the smoke before the whole building is evacuated. Also, as a "failsafe", if a heat detector alarms, or if a second smoke detector on the system goes into alarm, the system will go into full alarm.

13.2 SETTING THE ALARM VERIFICATION DELAY

To set the verification delay, go to Configuration menu 2 and select option 6 System menu.

From the system menu, select option 4 (timing)

```
System Menu
1: Clock  4: Timing
2: Zones  5: Misc
3: Alarms 6: Reset
```

From the alarm timing screen, select option 2 (Alarm Verify)

Use Prev & Next to adjust the time, then press enter to confirm

```
Alarm Timing
1: Zonal to Common
2: Alarm Verify
```

```
 Detector Verify Time
        0:30

   ENTER to Confirm
```

13.3 APPLYING ALARM VERIFICATION DELAY TO A DETECTOR

To set the verification delay for a detector, go to Configuration menu 2 and select option 5 (Edit Device).

Scroll to the required device, then press V for Verification. The letter V appears in the top right hand corner to confirm that this device now has the verification delay. Pressing "V" again will toggle the Verification off.

```
Optical             V
Analog:  25  Normal
Fl 3 Bedroom 303
Zone:01       Ad:016
```

14. RESTORING THE PANELS DEFAULT SETTINGSFGS

Because the ProFyre A2 now allows several configuration changes, we have also included an option to reset the panel back to its default operation. From Configuration Menu 2, Select Option 6 (Configure System).

```
System Menu
1: Clock   4: Timing
2: Zones   5: Misc
3: Alarms  6: Reset
```

Then from the System Menu, Select option 6 (Reset). This brings up the screen to select to reset :-

* Event Logs
* Zones
* Panel
* Devices

```
Optical              V
Analog:  25  Normal
Fl 3 Bedroom 303
Zone:01       Ad:016
```

Or

* All

The panel can be reset in sections, or completely as follows:-

OPTION	ITEM	FUNCTION
1	Logs	Clears event log (Note that the Event counter is not reset)
2	Zones	Sets the zone boundaries back to their default setting
3	Panel	Resets alarm response back to all common & resets system timers
4	Devices	Clears device information from memory, and clears device label & device configuration
6	All	Performs (2),(3),(4) in one operation

When you select to reset a section, the panel will display something like:

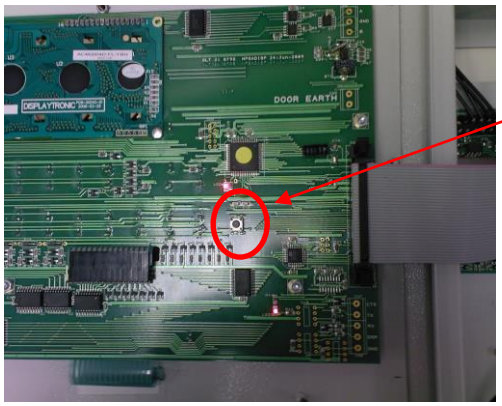
```
Clear Event Log


ENTER to Continue
```

Press enter to confirm, or cancel to abort the action. The panel will then warn that this action cannot be undone.

```
Clear Event Log
WARNING: This Action
cannot be undone
ENTER to Continue
```

Press enter to confirm, or cancel to abort the action. The panel will then ask for the Write protect button to be pressed. To Press the write enable button, the panel door will need to be unlocked, providing that extra level of security against accidental erasure.

```
Please press the
Write-Enable switch
on the CPU board
```



NOTE: Selecting Reset ALL will perform a factory reset on the panel, and will set the protocol to ProFyre MK II.

If the system was running Original Protocol devices, the protocol would need to be set to STANDARD protocol before the panel will see the devices. See Section 12.12

15. VIEWING PANEL INFORMATION

15.1 MENU STRUCTURE

To help locate the different features available, the menu structure of the ProFyre A2 panel is shown here.

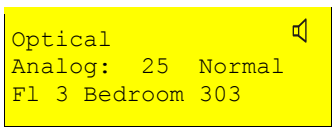
MENU LAYOUT			
MAIN MENU	SUB MENU 1	SUB MENU 2	DESCRIPTION
CONFIGURATION MENU 1 – THE USER MENU			
1:Loop Contents	-	-	View quantity of each device type configured on the loop
2:Device Status	-	-	View the status of an individual device (Status – normal/fault/alarm, Analogue value, device label
3:Event logs	VIEW EVENT LOG		
	1: Alarms	-	
	2: Faults	-	
	3: System	-	
	4: All	-	
CONFIGURATION MENU 2 – THE ENGINEER MENU			
4:Configure Loops	-	-	Configure the loop
5:Edit Device	-	-	Edit device label (press enter for cursor) Turn on detector LED Ring associated sounder Select alarm verification Turn off associated sounder at this address Disable this device. Select specific I/O Operation for an I/O unit
6:Config System	System Menu		
	1: Clock	-	Adjust time & date
	2: Zones	-	Change zone boundaries
	3: Alarms	Alarm Operation	
		1: Det	Choose detectors to cause zonal alarm or common alarm for sounders
		2: MCP	Choose MCP to cause zonal alarm or common alarm for sounders
		3: SOUNDER	Select if the sounders have a zonal to common time out when triggered zonally
		4: Bases	Select if associated sounder bases work common or zonal
		5: I/O	Select default I/O type
	4: Timing	Alarm Timing	
		1: Zonal to Common	Select the delay for all the sounders to operate after a zonal alarm
		2: Alarm Verify	Select alarm verification time
	5: Misc	Misc Settings	
		1: Language	Select LCD language
		2: Version Info	Displays the firmware versions
		3: Protocol	Select device protocol
	6: Reset	Reset Settings	
		1: Logs	Erases event logs
		2: Zones	Resets the default zone boundaries
		3: Panel	Resets panel to default alarm & timing settings
		4: Devices	Erases loop contents from memory, clears device labels, resets verification & sounder base settings to default.
		6: All	Resets all configuration settings, but preserves event log.

15.2 VIEWING DEVICE STATUS

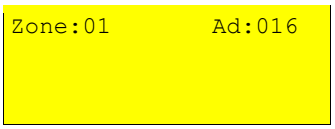
On the ProFyre A2, all loop devices can be viewed from Configuration Menu 1, or viewed & edited from Configuration Menu 2.

Enter configuration menu 2 as described above, and select option 5 (Edit Device).

The following screen is shown:



The screen is divided into the following sections:-

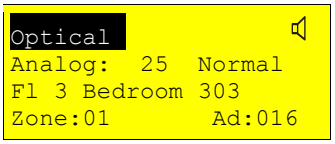


Configured Device Type

This shows the Device that was at this address during the last loop configuration.

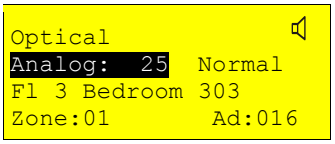
There are 8 possibilities for this:-

Optical, Ion, Heat, Call-Pt, Sounder, I/O Unit, Zone Mon or CO



Analogue Value

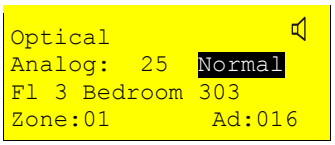
This shows the analogue value that the device is sending To the panel. For detectors, this value is usually about 25 for clean air, and 55 during alarm. Non analogue devices such as call points and I/O units have a normal value of 16, and an alarm value of 64. They will return a value of less than 8 to report a fault condition.



Device Status

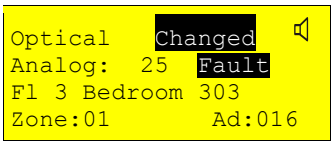
This is the current status of the device. It will show one of the following values:-

Normal, Fault, Alarm or Prealarm



Fault Description

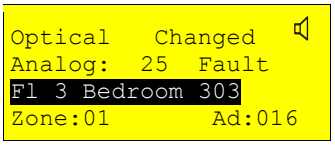
If the device is in a fault condition, a description of the fault will appear here. It will show one of the following messages:-



FAULT	MEANING
Changed	The device had been changed with one of a different type since last configuration. The message will flash between Changed, and the new type of device seen (e.g. Ion).
Missing	The device is not communicating (i.e. removed , damaged or Address setting changed)
Side A Only	There is a break in the cable, and the device is only seen from Side A
Side B Only	There is a break in the cable, and the device is only seen from Side B
2-ADDR	Two devices have the same address setting
No message	This device is signalling an internal fault by returning a value of less than 8. (e.g. sounder control unit that has lost its power supply.)

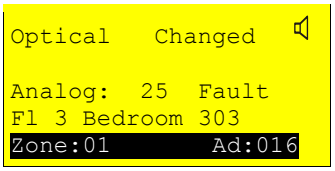
Device Label

This is the 20 character description of the device location entered by the installer. To change this Press Enter button to activate the cursor.



Device Identification

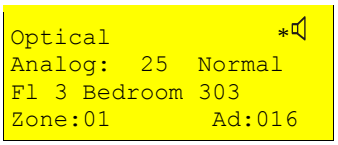
This is the Zone and address of the device. This is how the device will probably be referred to on the system drawings.



15.3 LOCATING A DEVICE

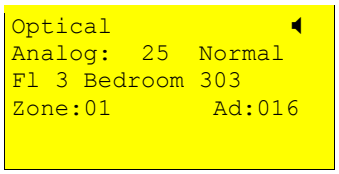
From the edit device screen, it is possible to send commands to individual devices to start their sounder, or to turn on their alarm LED.

Select the loop and address for the device to be checked.



If the device is an addressable detector, its LED can be turned on by pressing the TEST SELECT Button. A star will appear in the top right hand corner to show that the LED has been lit on this device. Press again to turn off.

If the device is an addressable sounder, or a detector with an associated sounder base attached, the sounder can be started by pressing the TEST button. The Outline sounder Symbol turns solid to show that the Sounder is active. Press again to turn off.

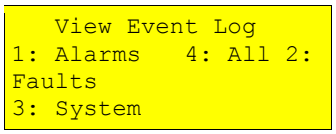


The LED & sounder can both be activated if required.

Scrolling to another device or exiting the menu will automatically turn the LED or sounder off.

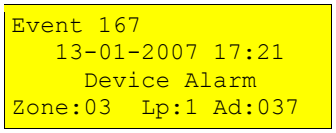
15.4 USING THE EVENT LOG

The ProFyre A2 has a 2048 entry event log. In the event of the log being full, it will wrap around, and overwrite the earliest entries. The event log can be viewed through Configuration Menu 1 by selecting Option 3 - View Event Log. The screen prompts for which events to display: Alarms, Faults, System or All.



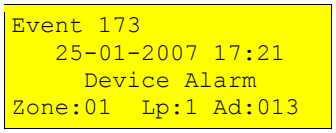
Alarms

If the alarm option is shown, only alarms will be displayed. The screen will show the event number, the date, the time, the type of event (in this case, a DEVICE ALARM), and the Zone, loop and address. Next & Previous buttons will cycle through the list.



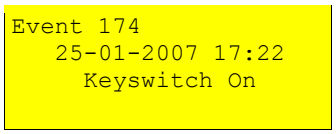
Faults

Selecting this option will display all the faults recorded on the system, Both device faults and general faults. The screen will show the event number, the date, the time, the type of event (in this case, a DEVICE CHANGED fault), and the Zone, loop and address, if appropriate. Next & Previous buttons will cycle through the list.

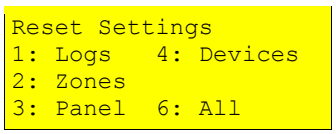


System

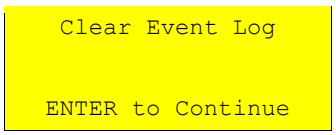
The ProFyre A2 also records other non critical items, such as keyswitch turned on etc. These can be used to help determine the chain of actions before or after an event. The type of events recorded are:- Power On/Startup, Panel Reset, Evacuate, Keyswitch ON, Keyswitch OFF, Sounders Silenced, Configure Loops, Time & Date Set, Zone Disabled, Zone Enabled, Device Disabled, Device Enabled, Zone Test Start, and Zone Test Finish.



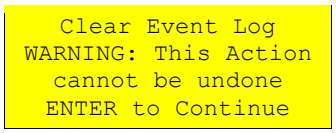
Note: during installation and commissioning, it is possible to create a large number of events, especially if a configured loop is disconnected. This is normal, and is not a case for concern. These events can be cleared, using Configuration Menu 2.



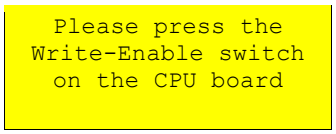
To clear the event log, go to Configuration Menu 2 and select option 6 (Configure System). Select Option 6 to go to the reset screen. Choose option 1 to reset event log.



The screen warns that this can not be undone. Press ENTER to clear the event log, or any other button to cancel this screen. It will also prompt for the write enable switch to be pressed.



Note that when the event log is cleared, the EVENT NUMBER remains the same. This is so that a visiting engineer will have an idea of the activity on a panel, even if the event log has been cleared. The counter has a maximum value of 524287, and will return to 0 after this.



16. THE FIRE ALARM CONDITION

16.1 VIEWING A FIRE ALARM EVENT

The way the ProFyre A2 panel shows fire alarm information has been changed slightly from previous versions of the panel. The LCD screen text has been altered to show the first & last zone entering the alarm condition.

For Example, a first alarm on a system will bring up the display:

```
FIRE        First Z01
1 of 1
Managers Office
Zone:01        Ad:001
```

This Means there is a fire alarm condition. It is the first (and only) alarm that has Occurred (Fire 1 of 1) The device signalling alarm is in the Manager's office, and It is address 001 in zone 01.

If a second fire then occurs in say zone 2, the system would display:

```
FIRE        First Z01
1 of 2       Last Z02
Managers Office
Zone:01        Ad:001
```

The bottom 2 lines will still show the details of the first alarm (Press Prev or Next to Display information about the second alarm). The top right hand corner shows the first zone that gone into alarm, and the last NEW zone that has gone into alarm. Note that the numbers in the top left corner (1 of 2) is the number of DEVICES in alarm, not the number of zones in alarm. The ZONAL LEDS will indicate the number of zones in the alarm condition.

```
FIRE        First Z01
2 of 2       Last Z02
Kitchen
Zone:02        Ad:017
```

So for example, if there was a third alarm, this time from zone 1 again, the right hand corner would continue to show First alarm ZONE 1, Last alarm ZONE 2. This allows the fire brigade to see the spread of the fire.

```
FIRE        First Z01
2 of 2       Last Z02
Kitchen
Zone:02        Ad:017
```

Because of this, if there are multiple alarms, they are grouped by zone, so scrolling to review alarms would show all alarms in the first zone in alarm , then all alarms in the second zone that went into alarm etc. To view the alarms chronologically, the event log must be used.

16.2 VIEWING FAULTS DURING A FIRE ALARM CONDITION

In the event of multiple alarms, and multiple faults on the system at the same time, the LCD screen will give priority to alarm events. The screen will show the first alarm, and the Prev/Next scroll buttons will cycle through alarm events only.

The LEDs will show general fault information. To show fault event details on the LCD screen, press the CANCEL button. Prev & next will now scroll through the faults. Press cancel to return to viewing the fire alarm information. (If the panel is left viewing a fault, after a short period of inactivity, the panel will revert to the fire alarm display)

16.3 VIEWING ZONE DISABLEMENTS DURING A FIRE ALARM CONDITION

Zone disablements are indicated by a LED for each zone.

If no individual devices are disabled, then by pressing the GENERAL DISABLEMENT button and the disablement SELECT button, information about zone disablements and the number of individually disabled devices per zone can also be viewed on the LCD.

If one or more devices are disabled, then when the GENERAL DISABLEMENT button is pressed, the screen will display the options as shown in section 17.4. Press 1 to select zone disablements, and then continue as per the paragraph above.

16.4 VIEWING DEVICE DISABLEMENTS DURING A FIRE ALARM CONDITION

To view individual device disablements during an alarm condition, press the GENERAL DISABLEMENTS button, and the screen will display the options as shown in section 17.4. Press 2 to select device disablements, and press the Next button to scroll through all the disabled devices.

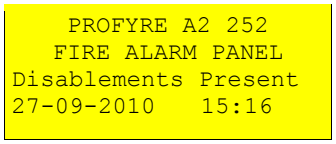
16.5 VIEWING ZONES IN TEST MODE DURING A FIRE ALARM CONDITION

On the ProFyre A2 panel, zone test mode is indicated by a LED for each zone, so LCD screen access is not required.

17. DISABLEMENT

On the ProFyre A2, there are 2 disablement options. A whole zone of devices can be disabled, or an individual device in a zone can be disabled. Both types of disablement can be used at the same time if required.

Note that when there is any type of disablement present, line 3 of the "System Normal" screen will show "Disablements Present".



Also note that any required disablement(s) must be programmed before a zone is put in to test mode.

17.1 ZONE DISABLEMENT

To aid commissioning and assist routine maintenance checks, any of the zones or the loop sounders can be disabled.

When a zone is disabled, the panel will not respond to any fault or fire signals it receives from any device in that zone.

This might be used if the system requires routine maintenance, and the customer needs the system to continue running, but doesn't want spurious false alarms.

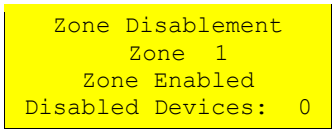
The panel will respond in the usual manner to any events in any non-disabled zones.

The ProFyre A2 also allows the loop sounders to be disabled. If they are disabled, the panel will not start any sounders in an alarm condition.

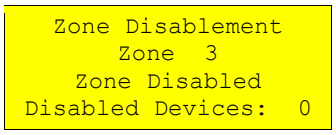
17.2 TO PROGRAMME ZONE (OR SOUNDERS) AS DISABLED

Any number of zones (or the sounders) can be disabled, but it is good practice to only disable one zone at a time.

1. Insert and turn control key to enabled position;
2. Press GENERAL DISABLEMENT button and the screen will show: ZONE DISABLEMENT ZONE 1. The panel is now in SELECT DISABLEMENT MODE.



3. Press DISABLEMENT SELECT until the required zone or loop sounders is DISPLAYED. Press DISABLEMENT CONFIRM button. The screen will now show that the zone is disabled, and the Zone or Sounder LED will come on steady, along with the GENERAL DISABLEMENT LED.

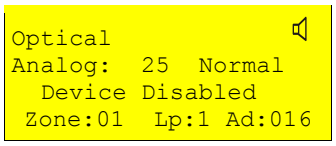


This section is now disabled. **(NOTE: Call points in this zone will also be disabled. To keep the call points functioning, disable the detectors in that zone individually as devices – see 17.3)**

4. If more than one zone (or sounder) needs to be disabled, then press DISABLEMENT SELECT again until the required zone (or sounder) is selected.
5. If the panel needs to be taken out of SELECT DISABLEMENT MODE (e.g. to silence a fault on another part of the system), Either press GENERAL DISABLEMENT button, or turn the keyswitch off, then back on again.
6. Once all the maintenance work has been done the zones need to be enabled again. If the panel is still in SELECT DISABLEMENT MODE, jump to paragraph 7, otherwise, turn the keyswitch to controls enabled, press GENERAL DISABLEMENT button. The panel is now in SELECT DISABLEMENT MODE
7. Press the DISABLEMENT SELECT button until the disabled zone is displayed on the screen. Press DISABLEMENT CONFIRM button to de-select disablement. Scroll to any other disabled zone and enable in the same way. When all zones are enabled again, the GENERAL DISABLEMENT LED will turn off. Turn the keyswitch to off position to return the system to normal. (NOTE: This will also enable any points individually disabled in that zone)

17.3 DEVICE DISABLEMENT

The ProFyre A2 panel can also disable individual devices (detector, call point, sounder or interface). To do this, enter CONFIGURATION MENU 2 and select EDIT DEVICE. Select the required device, then press GENERAL DISABLEMENT button. The Device label now flashes between the programmed label and Device Disabled. The general disablement LED will also be lit. This device is now disabled.



To re-enable the device, press the disable button again. Note that when all the devices in a Zone are disabled, the Zone is considered to be disabled, and the Zone disablement LED will light.

17.4 VIEWING DISABLEMENTS

When disablements have been programmed (either zone or device), the general disablement LED will be lit. To view the disablements, press the GENERAL DISABLEMENTS button, and the screen will show the following:

```
  Disablement
1: Zones
2: Devices
```

17.4.1 VIEWING DISABLED ZONES

To view which zones are disabled, press 1 and then scroll through all the zones, by pressing the disablement Select button or the Next button.

If a zone is not disabled, the screen will show:

```
  Zone Disablement
      Zone  1
    Zone Enabled
Disabled Devices:  0
```

If a zone is disabled, the screen will show:

```
  Zone Disablement
      Zone  1
    Zone Disabled
Disabled Devices:  0
```

If there are one or more disabled devices in a zone, the screen will show this by the number of Single Devices as follow.

(TIP: a quick way to enable several disabled devices is to disable the zone in which these devices are located, then re-enable it)

```
  Zone Disablement
      Zone  1
    Zone Enabled
Disabled Devices:  2
```

17.4.2 VIEWING DISABLED DEVICES

To view which devices are disabled, press 2 and scroll through all the disabled devices, by pressing the Next button.

The screen will show:

Line 3 will flash between the device label and Device Disabled Message.

```
Optical                 🔇
Analog:  25  Normal
  Device Disabled
Zone:01       Ad:016
```

18. TEST MODE

18.1 WHY USE TEST MODE

To aid commissioning and assist routine maintenance check, a silent, non-latching test facility is available.

When a detector or manual call point is triggered on any zone in Test, the Device will light its LED, When the smoke has cleared, or the call point has been reset, the LED will turn out.

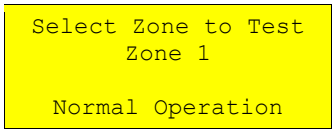
Should an Alarm occur on a zone that is not programmed to test, the Fire Alarm Panel will go into full alarm. The Zone test LED will continue to be lit. When the alarm has been reset, test mode will resume

18.2 TO PROGRAMME ZONE IN TEST MODE

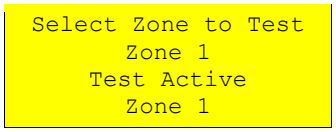
NOTE: Only one zone can be programmed in test at any one time.

1. Insert and turn control key to enabled position;
2. Press TEST Button. The screen will prompt for the test code
3. Enter the Test code **2 4 8**.

4. The screen will now invite you to select the zone to be tested, as follows:
5. Press TEST FUNCTION SELECT button to select the zone to be tested.
6. Press CONFIRM to enter test mode for this zone. The General Test and Zone Test LEDs will now be lit.



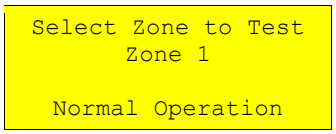
7. Detectors in this zone can now be tested with smoke spray. The Detector will light its LED until the smoke clears, then it will reset. The Sounders & the fire relay are not operated during test mode.
8. Once testing of that zone is completed, press TEST FUNCTION SELECT button to move to another Zone or turn the control key switch to off position to exit test mode.



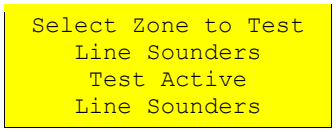
18.3 TO PROGRAM SOUNDER CIRCUITS IN TEST MODE

1. Insert Control Key and turn key to enabled position;
2. Press General TEST Button, The screen will prompt for the test code.
   Enter the code **2 4 8**.
3. The screen will now show Test Mode, Zone 1, Normal Operation.

4. Press TEST FUNCTION SELECT button several times to select the Loop SOUNDERS.
5. Press confirm to enter test mode for this function. The general test LED and the sounders test LED will now be lit.



6. The Sounders will now pulse 8 seconds on, 8 seconds off until they are taken out of test mode. This allows all the sounders to be tested for correct operation, and dB output.
7. Once testing of the loop sounder circuit is completed press CANCEL or turn the control key switch to off position to exit test mode.



Note : During Test Mode the Panel is at Access Level 2. Steps should be taken to avoid unauthorised access to the panel while it is in test mode.

19. GENERAL FAULT FINDING

On the ProFyre A2 panel, Faults are divided into 2 types, “Faults” and “Device Faults”. Device Faults are any fault associated with a particular address on the loop. Faults are everything else, EG , power supply etc. In the event of multiple faults, the Faults are grouped together first, followed by the device faults. Next button will scroll to next fault.

19.1 COMMON FAULT

This is a general indicator which lights whenever a fault is present. It doesn’t refer to a specific fault.

19.2 LOOP CONTENTS FAULT FINDING

If the loop contents are different to what was expected, then there three probable causes:-

1. Two or more devices may have the same address setting. This is referred to as a double address fault. If this occurs all devices with the same address will answer at the same time. The panel will not be able to understand the answer it receives. NOTE: If a panel detects a double address, it will light the LEDs of the devices with the problem. (NOTE: only detectors will light their LED. Sounders & interface modules will not be indicated).
2. There may be some reversed connections to devices (they are polarity sensitive). The ProFyre detectors should be connected Loop + to L2, loop – to L1IN. Other devices will have their polarity marked by their connections.
3. On the reduced loop ProFyre A2 panels (i.e. ProFyre A2 Micro & ProFyre A2 64), it is possible to address a detector out of the panels range (e.g. a ProFyre A2 64 would not read a detector set to address 65, but it will now report a device out of its address range to help identify this problem)

If the panel reports any double addresses present, investigate these first as they are the easiest to find. The panel will turn on the LED of any incorrectly addressed detector. (See 19.6 DOUBLE ADDRESS)

If there are still less devices than expected, check the missing addresses for correct wiring polarity. If in doubt, contact your supplier.

If the wiring polarity is correct, check that there is no cable break on the loop. (If there is a break, the panel will report the break after 60 seconds or so, and inside the panel, the LOOP POWERED LEDS (on the termination PCB) will alternate on & off). Some devices take a few seconds to power up, so may show as missing during the repeated Power Down / Power Up cycle that occurs during a line break.

19.3 ZONE FAULTS

There are several reasons for the zone fault LED to light.

1. There is a cable break, or short circuit to devices in that zone,
2. A device has been removed from that zone
3. A device has been changed for one of a different type
4. There is a double address in this zone (see previous section)
5. A device in that zone is communicating a fault condition to the panel with its analogue value. A value less than 8 is usually a fault condition. (This could be a zone monitor reporting a fault in its zone wiring, for example.)

The LCD will show Device Fault, the user label, and the address Of the fault. Pressing enter will bring up the View Device screen for the device showing fault. This will give more information about the fault.

```
*** Device Fault ***
      1 of 1
Floor 1 Room 101
Zone:01       Ad:001
```

In this example, the device is Missing. IE the panel is not receiving an answer from this address.

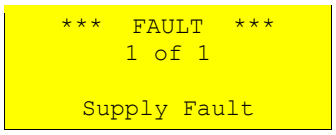
This could either be a removed detector, a changed address switch setting, or a damaged detector. Check the device has not been removed. Check that there is power to the base. Check address hasn’t been changed (compare to system set-up chart). Check that the base contacts are clean and free from dirt & corrosion. If possible, try a replacement head (remembering to set the correct address).

```
Optical  Missing    🔇
Analog:  00  Fault
Floor 1 Room 101
Zone:01       Ad:001
```

19.4 SUPPLY FAULTS

This version of the ProFyre A2 panel uses a separate power supply, so individual Fault indications are not available on the LCD.

To locate the cause of the supply fault, open the panel door, and check the LED indications on the Power Supply Board.



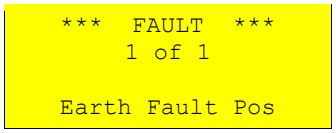
The Power supply will have LED indications for:-

- Mains Fail (Mains low or missing)
- Battery Fail (battery low, battery missing, battery high impedance)
- Charger fail
- Earth fault (can be disabled if earth fault monitored by panel)

19.5 EARTH FAULTS

An EARTH fault indicates that something is shorting to earth (usually through the cable screen). Disconnect the earth screens one at a time to determine the problem line.

(Note: connecting other equipment , e.g. an oscilloscope or a PC , to the panel can give an earth fault)



The Screen will indicate if it is a Positive or Negative voltage shorting to earth (Earth Fault Pos or Earth Fault Neg).

*****DO NOT DISCONNECT THE MAINS EARTH CONNECTION. THIS WILL CAUSE A PROBLEM WITH THE PANELS OPERATION*****

19.6 DOUBLE ADDRESS

This indicates that a double address has been detected. This usually happens during initial setup, where 2 detectors are given the same address, or if a head is replaced during maintenance, and its address has been wrongly set. In the second scenario, the panel will report 2 fault addresses, one will be the double address, and the other will be a missing device. As a further aid to finding the fault, the panel will light the LEDs of any detectors with a double address (Sounders & I/O units will not be indicated as they have no panel controlled LED to light up)

1. Make a list of the double addresses reported (there may be more than one).
2. Go to view device screen in Configuration menu 1. Scroll through the devices, and make a list of any that are missing (Note: the panel skips over empty addresses when scrolling)
3. Go to the location of the missing device, and check if it has its LED on (Detector), or check the dip switch setting.
4. If this does not cure all double addresses, go to the known location, and temporarily remove the device. The panel will now report the type of device that was also configured to this address from the view device screen. This will help narrow down the search for the device. (e.g. if extra device is call point, check the address settings of all the call points)

19.7 SYSTEM FAULT

A system fault is an abnormal microprocessor running condition due to various unexpected phenomena.

This will result in the panel attempting to correct itself. Should this fault occur, the System Fault LED, General Fault LED, General Fault relay and fault internal buzzer will be constantly active until the control keyswitch is turned from off position to control enable position. This should cause this fault condition to reset. If not, consult your supplier.

19.8 PRE-ALARM

This is not a fault condition. The panel has detected a high reading from one of the devices on the loop. This could be caused by a fire starting (in which case it acts as an early warning), or it could be caused by a contaminated head. The panel will report the location of the problem device, which should then be investigated.

The PRE-ALM LED is illuminated constantly during the pre-alarm condition. **Note that the same LED is used during the confirmation period of Alarm Verification (see section 13), but in this case the LED flashes.**

19.9 SOUNDER FAULTS

On the ProFyre A2 there are only loop controlled sounders, but there may be conventional sounder circuits connected via a ZSCC

Sounder circuit controllers (ZSCC).

Check :-

- Check that the correct END of Line resistor is fitted. (47K – Yellow, purple, orange, gold)
- Check that the sounder fuses is OK (FS1, – 4000mA TD)
- If working on an existing installation, check that the devices are polarised. (See Page 5)
- Check cable continuity (remove from panel and measure continuity. Should read 47K)
- Check its external power supply is connected & working

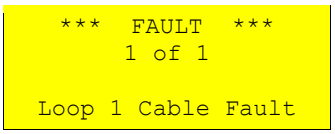
For loop powered sounders, check that all sounders are communicating, and check their analogue value. If a sounder is returning a value less than 8, then it has detected an internal fault and should be replaced.

If they are not communicating, then check that they have power, and that the power is connected the correct way. If they have power, they may be damaged. Try a replacement if available.

Note that common sounder bases, and associated sounders are only monitored through the cable continuity (similar to a conventional sounder circuit), so are not able to give any fault messages.

19.10 LOOP WIRING FAULTS

A loop fault can be caused by a break, or short circuit in the Loop wiring. Open the panel and look for the 2 LOOP ON LEDs on the termination PCB. (4 LEDs for a 2 loop ProFyre A2).Under normal conditions these should be all lit steady. The LEDs represent Loop1 Side A and Loop 1 side B, and Loop2 Side A and Loop 2 side B.



If both loop LEDs for a loop are off, then this indicates that there is a short on the loop that the isolators couldn't bypass. (Check that the isolators are enabled, and aren't set for a cable continuity check). Split the loop half way, and check if either side of the loop will power up. Continue making more splits until the short has been found.

If the LEDs for a loop are flashing (both on, side A only, both on, side B only etc. – monitor for 12 or so seconds to see if LEDs flash), then this indicates a break in the wiring. This could be caused by either a break, or a pair of isolators shutting down a short circuit. If there are several missing devices (wait for the zone fault LED & check the addresses in that zone), then there is probably a short circuit on the loop (look for isolators lit Yellow or flashing). The missing devices should give an indication of the section with the break. Investigate that section as per the dead short circuit fault tracking method, as described above.

If there are no missing devices, then there is probably a simple break. If the loop has been configured such that as you move down the loop, the address always increases, then the fault can be located through the menu.

Go to view device screen. And select the first device on the loop. The screen will say either Side A only or Side B only. Scroll through the loop. When it changes from Side A only to Side B only (or Vice versa), this should be the location of the break.

Alternatively, disconnect one side of the loop and check which devices can be read. The break should be after the last read device. (Take care to keep the removed cables away from the panels circuit boards.)

20. STANDBY BATTERY REQUIREMENTS

The Following Table shows the Quiescent, Fault & alarm currents of the main parts of a ProFyre A2 Fire Alarm System.

DEVICE	PRODUCT CODE	I_Q (MA)	I_{FLT} (MA)	I_{ALM} (MA)	MAX PER LOOP	MAX PER SYSTEM
PROFYRE A2 64 Fire Alarm Panel	17-050	90	105	115	N/A	1
PROFYRE A2 126 Fire Alarm Panel	17-051	90	105	115	N/A	1
PROFYRE A2 252 Fire Alarm Panel	17-052	115	120	130	N/A	1
Premier Addressable REPEATER PANEL	17-055	200	220	220	N/A	4*
ProFyre Extra Addressable Optical Smoke Detector	16-050	0.48	N/A	2.3	126	252
ProFyre Extra Addressable Heat Detector	16-051	0.44	N/A	2.4	126	252
ProFyre Extra High Temperature Heat Detector	16-052	0.44	N/A	2.4	126	252
ProFyre Extra Addressable Opto-Heat Detector	16-053	0.52	N/A	2.3	126	252
ProFyre Addressable Call Point (EN54)	16-020	1	N/a	2.9	126	252
ProFyre Weatherproof Addressable Call Point	16-022	1	N/a	2.9	126	252
ProFyre Input Unit	16-110	0.9	2.8	2.9	126	252
ProFyre Input Output Unit	16-111	0.9	2.8	10.6	16	32
ProFyre Input Output Unit – mains switching	16-114	0.9	2.8	19	10	20
ProFyre Sounder Control Module	16-112	0.9	2.8	10.6	16	32
Zone Monitor Unit	16-113	1.08	1.09	1.09	10	20
ProFyre Addressable Beam Detector (5-50m)	ZT-50RA	5	7	9	20	40
ProFyre Addressable Beam Detector (50-100m)	ZT-100RA	5	7	9	20	40
ProFyre Addressable Common Sounder Base	ZTA-CSB	0.4	N/a	4.0	64	128
ProFyre Addressable Common Sounder Flasher Base	ZTA-CSFIB	0.7	N/a	5.5	48	96
ProFyre Addressable Maxitone Sounder	16-160	0.6	N/a	12	32	64
ProFyre Addressable Maxitone Sounder flasher	16-162	0.6	N/a	15	24	48
ProFyre Addressable Securetone 2 Sounder	ZAS2/R	0.5	N/a	4.0	64	128
ProFyre Addressable Securetone 2 Sounder Flasher	ZAS2/RFI	0.9	N/a	5.5	48	96
ProFyre Addressable Remote LED Indicator	ZTA/LE2	1.5	N/a	10	32	64
ProFyre Addressable 3 wire Remote LED	ZTA/LE3	0	N/a	10	32	64
Conventional Sounders (via a sounder Control Circuit)						
ProFyre Conventional Maxitone Sounder	ZMT/8	0	N/a	15	N/a	N/a
ProFyre Conventional Miditone Sounder	ZMD/8	0	N/a	15	N/a	N/a
ProFyre Conventional Securetone Sounder	ZST/8	0	N/a	15	N/a	N/a
ProFyre Conventional Megatone Sounder	ZIDC	0	N/a	200	N/a	N/a
ProFyre Conventional Flasher	ZFL2RR	0	N/a	90	N/a	N/a
ProFyre Conventional Sounder Flasher	ZLT/8RR	0	N/a	110	N/a	N/a
ProFyre Conventional 6” Bells	ZTB6B/24	0	N/a	25	N/a	N/a
ProFyre Conventional 8” Bells	ZTB8B	0	N/a	35	N/a	N/a
Conventional Detectors (via a Zone Monitor)						
ProFyre Conventional Optical Detector	12-020	0.06	N/a	25	N/a	N/a
ProFyre Conventional Heat Detector (A1R)	12-021	0.04	N/a	25	N/a	N/a
ProFyre Conventional Heat Detector (CS)	12-022	0.04	N/a	25	N/a	N/a
GSM COMMUNICATOR	GSM-COM	200	500	500	N/A	1
TCP-IP COMMUNICATOR	TCP-IP	80	80	80	N/A	1

* The ProFyre A2 can only power 1 repeater. Any subsequent ones will need a separate power supply.

20.1 STANDBY BATTERY CALCULATION

In order to calculate the standby battery size required, the following formula can be used:-

Battery Size (Standby time in Amp Hours) = 1.25 x [(T_{ALM} x I_{ALM}) + (T_{SBY} x (I_{QP} + I_{QZ}))]

Where:

T_{ALM} = Maximum time in hours required for the alarm [½ hour is most common time]

I_{ALM} = Total Alarm Current in amps for all alarm devices connected to the alarm circuits

T_{SBY} = Standby time in hours for the system after mains failure [normally 24, 48 or 72 hr]

I_{QP} = Quiescent current in amps of control panel in fault condition [because of mains failure]

I_{Qz} = Quiescent current in amps of all detection zones. e.g. Addressable optical detector 0.00048 Amp (480 µA)

Typical Example:

A system comprises of 80 Addressable Optical detectors, 30 Sounder bases and the required standby is 24 hours. It will need to operate in alarm for ½ hour.

Calculate the battery size required.

T_{ALM} = 0.5 Hr
T_{SBY}= 24 Hr

I_{QP} = 0.105A (Quiescent current for panel)
I_{QD} = 80 x 0.00048 =0.0384 A [the quiescent current for an Addressable Optical detector is 480 µA)
I_{Qs} = 30 x 0.0004 =0.012 A [the quiescent current for an Addressable sounder is 400 µA)

$I_{Alm-snd}$ = 30 x 0.004 =0.12A
I_{AP} = 0.115A

Therefore using the equation:

Battery Size (Standby time in Amp Hours) = 1.25 x [(Df x T_{ALM} x $I_{ALM-snd}$+I_{AP})+ (T_{SBY} x (I_{QP} + I_{QD}+ I_{Qs}))]

(DF is a derating factor (typically = 2) used when a battery has to supply a high current load)

Battery Size (Standby time in Amp Hours) = 1.25 x [(2 x 0.5 x (0.115+0.12)) + (24 x (0.105 + 0.0384 + 0.012))]

Battery Size (Standby time in Amp Hours) = 1.25 x [0.235 + (24 x 0.1554)]

Battery Size (Standby time in Amp Hours) = 1.25 x [0.235 + 3.7296]

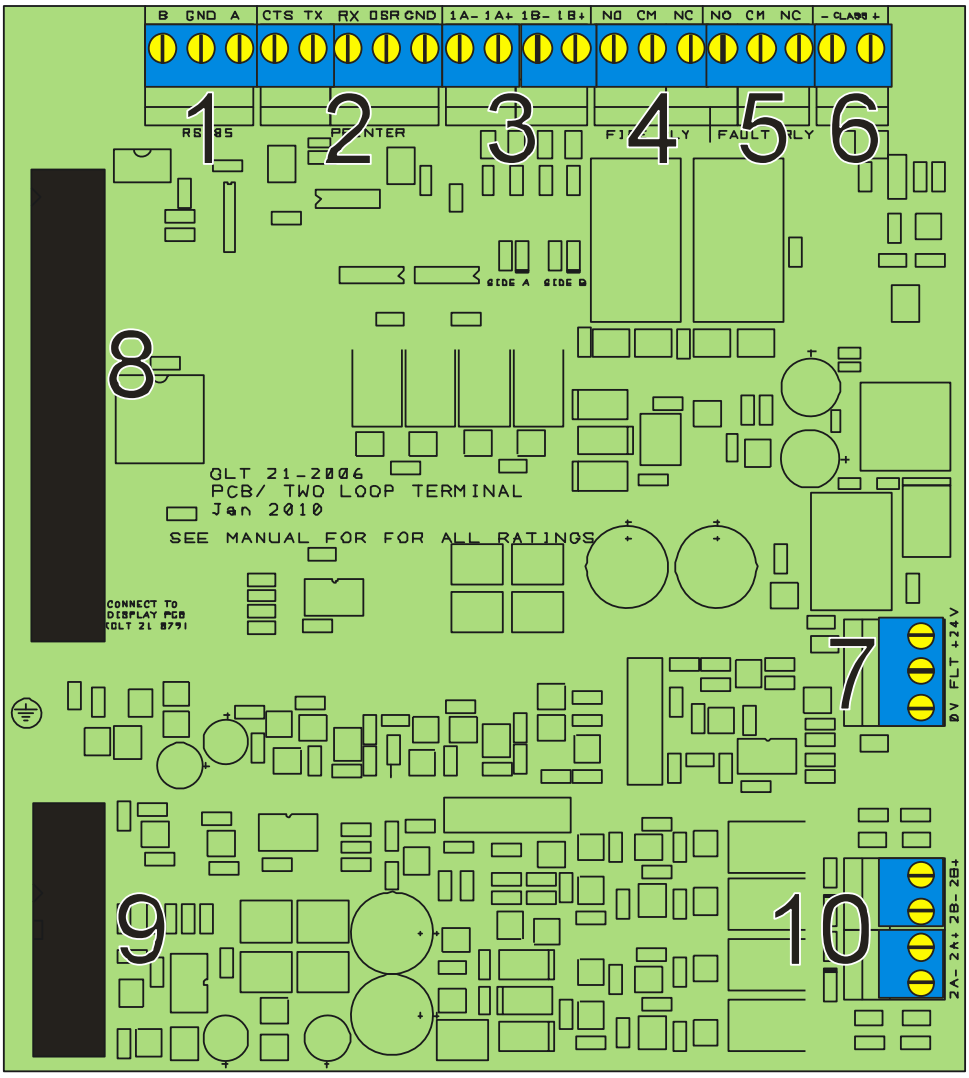
Battery Size (Standby time in Amp Hours) = 1.25 x 3.9646

Battery Size (Standby time in Amp Hours) = 4.95575 Amp Hours

This system would require a minimum of 4.96 Ah batteries, so we would recommend using 7Ah batteries .

21. PCB TERMINATION CONNECTIONS

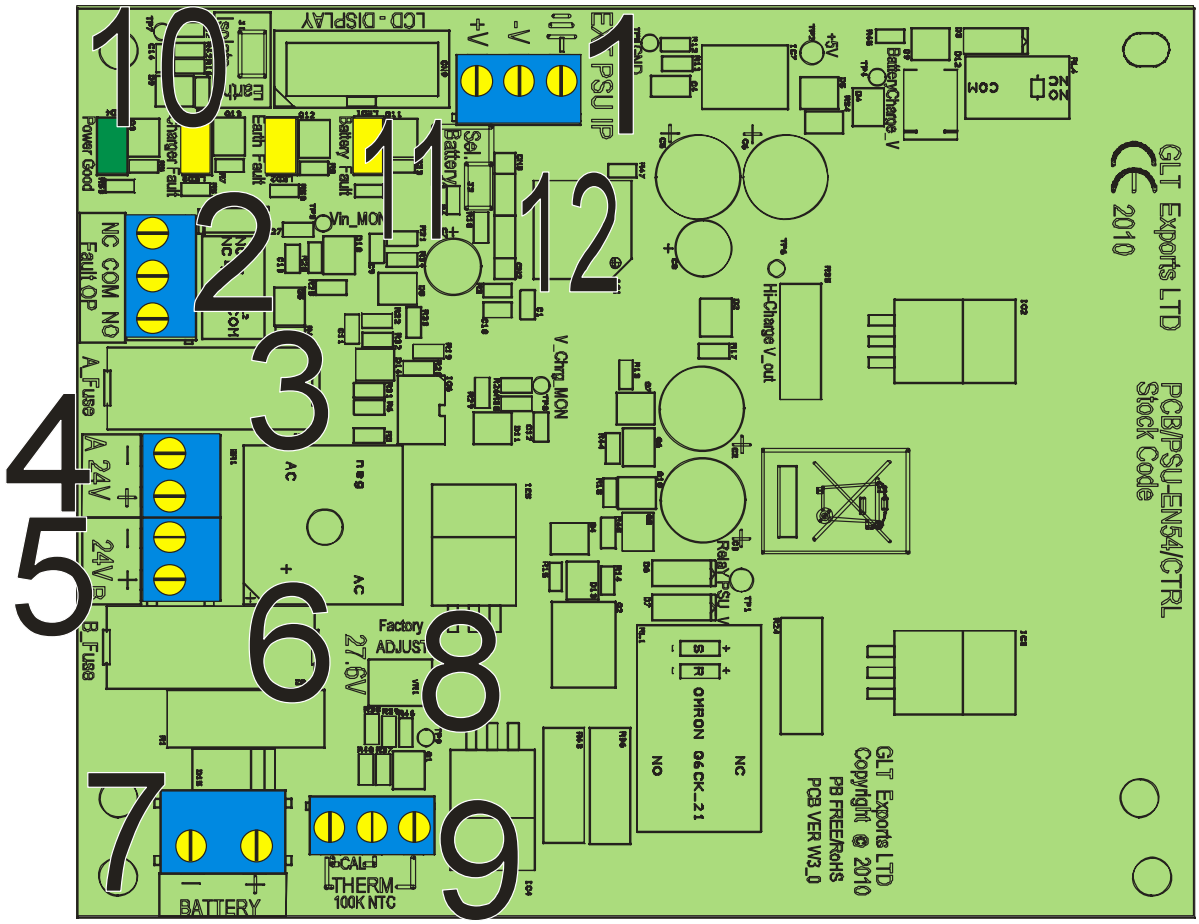
21.1 PROFYRE A2 CIE TERMINATION PCB



21.2 CONNECTIONS

CONNECTION NO	DESCRIPTION	USE
1	RS 485 REPEATER	To link to addressable repeater
2	RS232 PRINTER	Serial port. Link to printer or TCP-IP reporting module
3	ADDRESSABLE LOOP 1	Connect to detector wiring: loop 1
4	FIRE RELAY	Volt free relay. Operates on any alarm
5	FAULT RELAY	Volt free relay – normally energised. Operates on any fault
6	CLASS CHANGE	Remote input to operate fire alarm panel sounders
7	24V & FAULT FROM PSU	Power & power supply fault connection to power supply
8	34 WAY RIBBON CABLE TO DISPLAY	Connects Loop 1 signals & general signals to display PCB
9	10 WAY RIBBON CABLE TO DISPLAY	Connects Loop 1 signals to display PCB (on 2 loop ProFyre A2 only)
10	ADDRESSABLE LOOP 2	Connect to detector wiring: loop 2 (on 2 loop ProFyre A2 only)

21.3 PROFYRE A2 POWER SUPPLY PCB



21.4 PROFYRE A2 POWER SUPPLY CONNECTIONS

CONNECTION NO	DESCRIPTION	USE
1	EXT PSU IP	External Power input from Switch Mode cage
2	FAULT OP	Volt free fault relay, normally energised
3	A-FUSE	Fuse for the first 24V output
4	24V A	Connection for the first 24 V output
5	24V B	Connection for the second 24 V output
6	B-FUSE	Fuse for the second 24V output
7	BATTERY	Battery connection. 2 x 12V SLA batteries wired in series
8	FACTORY ADJUST	Charger adjust pot. DO NOT ADJUST
9	THERM	Battery charger temperature compensation thermistor
10	EARTH ISOLATE	Jumper link to enable / disable earth fault reporting
11	SEL. BATTERY	Link to put charger in calibration mode from power up.
12	CN2 / CN3	ISP programming connector

21.5 PROFYRE A2 POWER SUPPLY FUSES

FUSE NO	DESCRIPTION	RATING
IN LINK WIRE	Battery Fuse	5.0A time delay 5 x 20mm glass
FS1	Supply Fuse A	1.0A time delay 5 x 20mm glass
FS2	Supply Fuse B	1.0A time delay 5 x 20mm glass

22. SPECIFICATIONS

22.1 ENCLOSURE SPECIFICATIONS

DESCRIPTION	VALUE
ENCLOSURE SIZE	375 x 335 x 125 mm
TOP CABLE ENTRIES	12 x 19mm DIA GROMMETED ENTRIES
BOTTOM CABLE ENTRIES	2 x 19mm DIA GROMMETED ENTRIES
REAR CABLE ENTRIES	2 REMOVABLE CABLE ENTRIES, 60 x 20mm

22.2 ELECTRICAL SPECIFICATIONS

ELECTRICAL DESCRIPTION	VALUE
MAINS VOLTAGE	230V AC +10% / -15% @ 50/60 Hz
BATTERY VOLTAGE	24V DC (2 X 12V SLA BATTERY)
SYSTEM VOLTAGE	28V DC NOMINAL (18 – 32 V)
SYSTEM VOLTAGE RIPPLE	1V PK-PK MAX
CHARGER SIZE	750mA
LOOP VOLTAGE	28V DC NOMINAL (+9 volt data)
SOUNDER ALARM OUTPUTS	LOOP POWERED SOUNDERS ONLY
AUXILIARY FAULT OUTPUT	1 x FAULT RELAY SELV@1A (NORM. ENERG)
AUXILIARY FIRE OUTPUT	1 x FIRE RELAY SELV@1A
NUMBER OF LOOPS	PROFYRE A2 64 - 1 LOOP PROFYRE A2 126 - 1 LOOP PROFYRE A2 252 - 2 LOOPS
MAXIMUM NUMBER OF ZONES	PROFYRE A2 64 - 4 ZONES PROFYRE A2 126 - 8 ZONES PROFYRE A2 252 - 8 ZONES
MAXIMUM LOOP CAPACITY	PROFYRE A2 64 – 64 Devices PROFYRE A2 126 - 126 Devices PROFYRE A2 252 - 126 Devices
MAXIMUM ZONE CAPACITY	RECOMMENDED MAX - 32 DEVICES PER ZONE
MAXIMUM LOOP RESISTANCE	25 ohms
MAXIMUM LOOP CAPACITANCE	0.3µF
MAXIMUM VOLTAGE PICKUP ALLOWED	50mV
REMOTE SOUNDER ACTIVATION	VIA N/O CONTACTS
CHARGER VOLTAGE	27.6V @ 22-24^{O}C (NO BATTERY CONNECTED)
LOOP SHORT CIRCUIT PROTECTION	750mA
BATTERY DEEP DISCHARGE PROTECTION	Batteries less than 19.7V
TOTAL PSU OUTPUT	2.5 Amp

CE

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Eurofyre Limited,
72-78 Morfa Road, Swansea SA1 2EN

EN54-2:1997+A1:2002 + A2: 2006
EN54-4:1997+A1:2002 + A2: 2006

Control and indicating equipment for fire detection and fire alarm systems for buildings

ProFyre A2

Provided options:

Output to fire alarm devices
Dependencies on more than one alarm signal
Fault signals from points
Disablement of addressable points
Test condition

Other Technical Data: See Doc: “ProFyre A2 Product file” held by the manufacturer